


ALBERTA HOUSE COST
COMPARISON STUDY

Executive Summary

Single Detached Dwelling
24 Unit
Walk-up Apartment

Alberta
MUNICIPAL AFFAIRS
Housing Division



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## PREFACE

The main purpose of the 1989 Alberta House Cost Comparison Study was to provide estimates of the hard construction costs of a prototypical single-detached dwelling and a 24 unit walk-up apartment in ten urban centres in this Province.

The study also compared 1989 residential construction costs with those of previous years in the selected urban centres. Most emphasis was given to a comparison of 1989 with 1988 costs and the study included an analysis of these differences.

The 1989 study was carried out by Helyar & Associates and is documented in three reports:

1989 Alberta House Cost Comparison Study : Executive Summary  
1989 Alberta House Cost Comparison Study : Single-Detached Dwelling  
1989 Alberta House Cost Comparison Study : Walk-Up Apartment

Additional copies of any of these reports can be ordered from :

ALBERTA MUNICIPAL AFFAIRS  
Housing Division  
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## 1.0 INTRODUCTION

### 1.1 Objectives

The objectives of the 1989 Alberta House Cost Comparison Study were:

1. To determine 1989 fixed residential construction costs in selected urban centres in Alberta.
2. To determine ranges for differences in residential construction costs in the selected centres.
3. To carry out detailed comparisons of 1989 residential construction costs with 1988 residential construction costs in the selected centres.
4. To determine and report on changes in construction costs over the two year period in the selected centres.

## 1.0 INTRODUCTION

### 1.2 Scope of Work

The 1989 Alberta House Cost Comparison Study examined the construction costs of a typical single-detached dwelling and a 10 unit multi-unit apartment building.

The study has been presented in three parts: an Executive Summary, a report on a typical single-detached dwelling and a report on a multi-unit apartment. This report is the Executive Summary.

The study examined building construction costs in the following centres:

- |                   |                   |
|-------------------|-------------------|
| 1. Edmonton       | 6. Lethbridge     |
| 2. Calgary        | 7. Medicine Hat   |
| 3. Red Deer       | 8. Lloydminster   |
| 4. Fort McMurray  | 9. Grande Prairie |
| 5. Grande Prairie | 10. Peace River   |





## 1.0 INTRODUCTION

### 1.1 Objectives

The objectives of the 1989 Alberta House Cost Comparison Study were:

1. To determine 1989 hard residential construction costs in selected urban centres in Alberta.
2. To determine reasons for differences in residential construction costs in the selected centres.
3. To carry out detailed comparisons of 1989 residential construction costs with 1988 residential construction costs in the selected centres.
4. To determine and comment on residential construction cost trends over the last nine years in the selected centres.

### 1.2 Scope of Work

The 1989 Alberta House Cost Comparison Study examined the construction costs of a typical single-detached dwelling and a 24 unit walk-up apartment building.

The study has been documented in three reports : an Executive Summary, a report on a typical single-detached dwelling and a report on a walk-up apartment. This report is the Executive Summary.

The study examined building construction costs in the following centres:

- |                   |                 |
|-------------------|-----------------|
| 1. Edmonton       | 6. Hinton       |
| 2. Calgary        | 7. Lethbridge   |
| 3. Red Deer       | 8. Medicine Hat |
| 4. Fort McMurray  | 9. Lloydminster |
| 5. Grande Prairie | 10. Peace River |

## 1.0 INTRODUCTION

### 1.2 Scope of Work (continued)

The cost analysis of both the single-detached dwelling and the walk-up apartment examined the building construction cost differences between each of the centres and identified the reasons for those differences with reference to such factors as :

- a) material costs,
- b) labour costs,
- c) building features and inclusions,
- d) construction specifications and standards and
- e) other factors as appropriate.

The cost estimates of the single-detached dwelling for each centre include all structural, finishing, mechanical and electrical work as shown on the drawings and included in the specifications and also include allowances for site overhead. The cost estimates exclude the following items :

- a) cost of land and site clearance,
- b) site servicing costs,
- c) site development costs,
- d) design fees and expenses,
- e) legal fees and expenses,
- f) marketing and real estate financing costs,
- g) appliances (fridge and stove) and
- h) general contractors' overhead and profit.



## 1.0 INTRODUCTION

### 1.2 Scope of Work (continued)

The cost estimates of the walk-up apartment for each centre include all structural, finishing, mechanical and electrical work as shown on the drawings and included in the specifications and also include allowances for site overhead and contractors' overhead and profit. The cost estimates exclude the following items:

- a) cost of land and site clearance,
- b) site servicing costs,
- c) site development costs,
- d) design fees and expenses,
- e) legal fees and expenses and
- f) marketing and real estate financing costs.

### 1.3 Approach

The building construction costs are detailed in the report under the headings of labour and material/equipment costs. Labour rates used in the report are either those established by the trade union concerned, or by the market where trade union rates do not apply. In most cases, a realistic assessment of labour rates has been established by examining the circumstances of the particular sub-trade within the building industry. Material prices have been evaluated from building materials suppliers' lists. Average discounts are applied in order to establish a realistic market price for the materials to contractors.

## 1.0 INTRODUCTION

### 1.3 Approach (continued)

Prior to 1988, the single-detached dwelling studied had been a bungalow of 100m<sup>2</sup> (1,076 S.F.). In 1988, this was updated to a four level split dwelling of 151m<sup>2</sup> (1,625 S.F.) finished on three levels and complete with attached double garage to better represent current housing construction trends.

Previous years costs were revised to reflect this change and to maintain the trend of previous years studies.

The cost data are assembled by sub-trade and presented in 21 trade categories for the single-detached dwelling plus a category for site overhead and 23 trade categories for the walk-up apartment. Site overhead and general contractor's office overhead and profit are shown separately for the walk-up apartment to indicate the site costs. The sub-trade operations are combined within each trade category in order to reflect current estimating practice within the industry.

A computer program was developed in order to collate and present the cost data which were assembled for the ten centres. The quantities and trade descriptions were initially established for the prototypical house and apartment building. The cost data applicable to the relevant quantities and trade descriptions for each centre were then processed by computer.

The cost effects of market forces and building industry conditions are addressed in the "Findings" section of this report.



## 1.0 INTRODUCTION

### 1.4 Findings

Alberta's economy has maintained a modest rate of growth during 1989. There has been an increased demand for housing in certain centres due to the influx of people from other Provinces and the unemployment rate was down in comparison with the previous year. Province-wide, there has been an increase in housing starts indicating a general optimism for an improving economy. Activity in the oil business has been very poor but natural gas, timber and pulp and paper sectors continue to pick up and major impacts from proposed projects will be realised over the next few years. Most areas of the Province have seen upward movement of housing prices although in smaller communities, this was to a lesser degree. Lot prices are up in most of the centres studied due to the lack of lower priced lots.

Costs for the prototypical single-detached house have increased by an average of 5.1% province-wide. The greatest increase was 6.9% in Edmonton and the lowest was 3.2% in Fort McMurray.

Apartment construction activity, which was greater than in previous years, was generally confined to the Edmonton - Calgary corridor with lesser activity in Lethbridge and Medicine Hat.

With apartment vacancy rates dropping and the rental market improving in 1989, costs for apartment construction increased in all centres by an average of 5.9%. The greatest increase was 7.7% in Red Deer and the smallest increase was 3.2% in Fort McMurray.

The graphic presentation of construction costs of the single-detached dwelling in Table SD.6 indicates that construction costs in all centres have moved above 1981 nominal dollars (from an average 1981 cost of \$ 67,692 to an average 1989 cost of \$ 81,920 or 21.0% more). However, expressed in terms of inflation adjusted, real 1989 dollars, as shown in table SD.8, costs are still 15.6% below the 1981 average of \$ 97,058 at \$ 81,920.

## 1.0 INTRODUCTION

### 1.4 Findings (continued)

The graphic presentation of apartment construction costs in Table WA.8 indicates that average costs are higher than 1981 costs when expressed in nominal dollars (from \$ 31,529 in 1981 to \$ 34,498 in 1989 or 9.4% more). Expressed in inflation adjusted, real 1989 dollars, as shown in table WA.10, the total average costs are 23.7% less than the 1981 costs, from \$ 45,208 in 1981 to \$ 34,498 in 1989.

Increases in labour costs for both single-detached dwellings and for apartment construction were greatest in Edmonton and in Red Deer due to shortages of skilled labour in these centres. Other centres experienced some skilled labour shortages, but to a much lesser degree.

Material prices for the single-detached dwelling and the walk-up apartment building have increased marginally in all centres. Material price increases varied according to the type of material and centre. One of the largest increases was on manufactured boarding which increased between 15% and 20%. Timber generally increased between 5% and 10%. The increases in timber and manufactured boarding prices can be attributed to bouyant markets. These increases were lowest in Fort McMurray due to lack of demand and in Grande Prairie, Hinton and Peace River because of their proximity to the source of supply. While there has been no increase in concrete prices anywhere, they continue to vary considerably from centre to centre, due to demand, location and availability of aggregates and cement. Drywall and insulation prices fluctuated but have stayed in the same range. In most centres the majority of price increases were passed on to consumers; in previous years, builders have absorbed some increases to remain competitive in the marketplace.

No significant changes were observed as a result of building practice changes or changes in standard materials used by the majority of builders. However, it should be noted that there is a trend away from basic appliances in apartments. In this report, the refrigerator has been upgraded from a manual defrost .37 m3 (13 cu. ft.) model to a frost free .42 m3 (15 cu. ft.) model.



## 2.0 SUMMARY OF FINDINGS FOR THE SINGLE-DETACHED DWELLING





2.0 SUMMARY OF FINDINGS FOR THE SINGLE-DETACHED DWELLING

TABLE SD. 1 : Total Building Costs

| ITEM              | EDMONTON |       | CALGARY  |       | RED DEER |       | FORT McMURRAY |       | GRANDE PRAIRIE |       | HINTON   |       | LETHBRIDGE |       | MEDICINE HAT |       | LLOYDMINSTER |       | PEACE RIVER |       |
|-------------------|----------|-------|----------|-------|----------|-------|---------------|-------|----------------|-------|----------|-------|------------|-------|--------------|-------|--------------|-------|-------------|-------|
| ELEMENT           | TOTAL    |       | TOTAL    |       | TOTAL    |       | TOTAL         |       | TOTAL          |       | TOTAL    |       | TOTAL      |       | TOTAL        |       | TOTAL        |       | TOTAL       |       |
|                   | \$       | %     | \$       | %     | \$       | %     | \$            | %     | \$             | %     | \$       | %     | \$         | %     | \$           | %     | \$           | %     | \$          | %     |
| Labour            | 22,264   | 29.1  | 23,993   | 29.6  | 23,826   | 29.5  | 25,307        | 28.8  | 24,131         | 28.5  | 24,865   | 30.1  | 22,550     | 28.1  | 22,762       | 28.1  | 20,876       | 26.4  | 24,604      | 28.8  |
| Material          | 54,318   | 70.9  | 57,084   | 70.4  | 56,984   | 70.5  | 62,589        | 71.2  | 60,402         | 71.5  | 57,816   | 69.9  | 57,777     | 71.9  | 58,184       | 71.9  | 58,096       | 73.6  | 60,774      | 71.2  |
| Total 1989        | 76,582   | 100.0 | 81,077   | 100.0 | 80,810   | 100.0 | 87,896        | 100.0 | 84,533         | 100.0 | 82,681   | 100.0 | 80,327     | 100.0 | 80,946       | 100.0 | 78,972       | 100.0 | 85,378      | 100.0 |
| Cost per m2       | \$507.17 |       | \$536.93 |       | \$535.17 |       | \$582.09      |       | \$559.82       |       | \$547.56 |       | \$531.97   |       | \$536.07     |       | \$522.99     |       | \$565.42    |       |
| Cost per SF       | \$47.12  |       | \$49.88  |       | \$49.72  |       | \$54.08       |       | \$52.01        |       | \$50.87  |       | \$49.42    |       | \$49.80      |       | \$48.59      |       | \$52.53     |       |
| Cost per SF 1988  | \$44.09  |       | \$47.28  |       | \$46.61  |       | \$52.38       |       | \$49.87        |       | \$48.32  |       | \$46.78    |       | \$46.90      |       | \$47.01      |       | \$50.50     |       |
| Total 1988        | \$71,666 |       | \$76,851 |       | \$75,754 |       | \$85,137      |       | \$81,050       |       | \$78,542 |       | \$76,031   |       | \$76,232     |       | \$76,401     |       | \$82,080    |       |
| Changes From 1988 | 6.9%     |       | 5.5%     |       | 6.7%     |       | 3.2%          |       | 4.3%           |       | 5.3%     |       | 5.7%       |       | 6.2%         |       | 3.4%         |       | 4.0%        |       |

Note : Several total figures may appear in this report as not being added correctly. This is due to the rounding effect in the calculations of the detail costing for each centre.

2.0 SUMMARY OF FINDINGS FOR THE SINGLE-DETACHED DWELLING

TABLE SD. 2 : Comparative Costs Ratios \*

| LOCATION          | EDMONTON | CALGARY | RED DEER | FORT<br>McMURRAY | GRANDE<br>PRAIRIE | HINTON | LETHBRIDGE | MEDICINE<br>HAT | LLOYD-<br>MINSTER | PEACE<br>RIVER |
|-------------------|----------|---------|----------|------------------|-------------------|--------|------------|-----------------|-------------------|----------------|
| EDMONTON          | 1.00     | 1.06    | 1.06     | 1.15             | 1.10              | 1.08   | 1.05       | 1.06            | 1.03              | 1.11           |
| CALGARY           | 0.94     | 1.00    | 1.00     | 1.08             | 1.04              | 1.02   | 0.99       | 1.00            | 0.97              | 1.05           |
| RED DEER          | 0.95     | 1.00    | 1.00     | 1.09             | 1.05              | 1.02   | 0.99       | 1.00            | 0.98              | 1.06           |
| FORT<br>McMURRAY  | 0.87     | 0.92    | 0.92     | 1.00             | 0.96              | 0.94   | 0.91       | 0.92            | 0.90              | 0.97           |
| GRANDE<br>PRAIRIE | 0.91     | 0.96    | 0.96     | 1.04             | 1.00              | 0.98   | 0.95       | 0.96            | 0.93              | 1.01           |
| HINTON            | 0.93     | 0.98    | 0.98     | 1.06             | 1.03              | 1.00   | 0.97       | 0.98            | 0.96              | 1.03           |
| LETHBRIDGE        | 0.95     | 1.01    | 1.01     | 1.09             | 1.05              | 1.03   | 1.00       | 1.01            | 0.98              | 1.06           |
| MEDICINE<br>HAT   | 0.95     | 1.00    | 1.00     | 1.09             | 1.04              | 1.02   | 0.99       | 1.00            | 0.98              | 1.05           |
| LLOYD-<br>MINSTER | 0.97     | 1.03    | 1.02     | 1.11             | 1.07              | 1.05   | 1.02       | 1.02            | 1.00              | 1.08           |
| PEACE<br>RIVER    | 0.90     | 0.95    | 0.95     | 1.03             | 0.99              | 0.97   | 0.94       | 0.95            | 0.92              | 1.00           |

\* Entries refer to the ratio of the price for a city in the top row of the table divided by a price for the city listed in the column. For example, Red Deer costs are 1.06 times Edmonton costs.



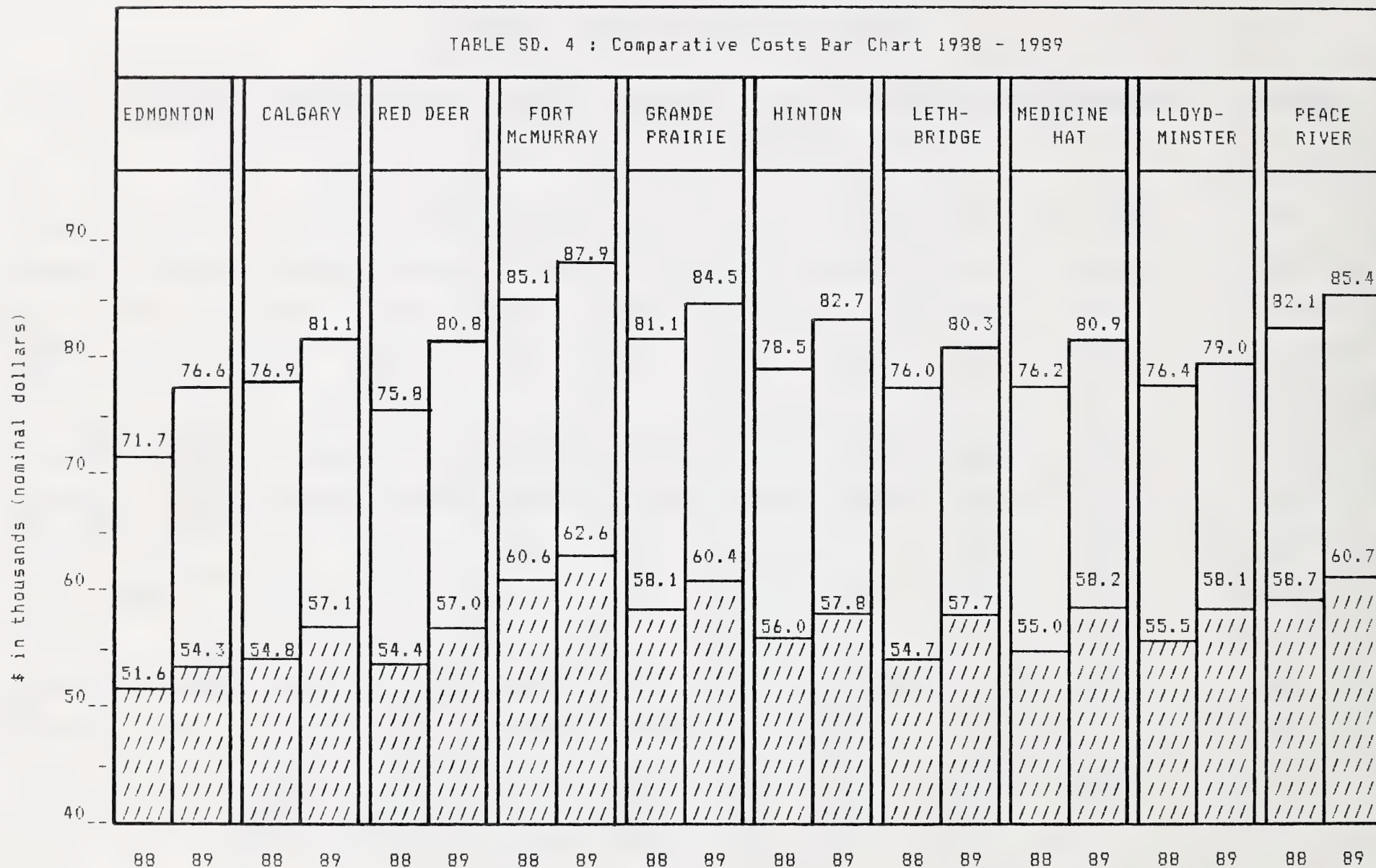
2.0 SUMMARY OF FINDINGS FOR THE SINGLE-DETACHED DWELLING

TABLE SD. 3 : Comparative Costs Table 1988 - 1989

| LOCATION     | EDMONTON | CALGARY  | RED DEER | FORT<br>McMURRAY | GRANDE<br>PRAIRIE | HINTON   | LETHBRIDGE | MEDICINE<br>HAT | LLOYD-<br>MINSTER | PEACE<br>RIVER |
|--------------|----------|----------|----------|------------------|-------------------|----------|------------|-----------------|-------------------|----------------|
| Labour Cost  |          |          |          |                  |                   |          |            |                 |                   |                |
| 1989         | \$22,264 | \$23,993 | \$23,826 | \$25,307         | \$24,131          | \$24,865 | \$22,550   | \$22,762        | \$20,876          | \$24,604       |
| 1988         | \$20,063 | \$22,089 | \$21,306 | \$24,554         | \$22,973          | \$22,587 | \$21,291   | \$21,187        | \$20,867          | \$23,427       |
| Difference   | 2201     | 1904     | 2520     | 753              | 1158              | 2278     | 1259       | 1575            | 9                 | 1177           |
| % Difference | 11.0%    | 8.6%     | 11.8%    | 3.1%             | 5.0%              | 10.1%    | 5.9%       | 7.4%            | 0.0%              | 5.0%           |
| Mat'l Cost   |          |          |          |                  |                   |          |            |                 |                   |                |
| 1989         | \$54,318 | \$57,084 | \$56,984 | \$62,589         | \$60,402          | \$57,816 | \$57,777   | \$58,184        | \$58,096          | \$60,774       |
| 1988         | \$51,603 | \$54,762 | \$54,448 | \$60,583         | \$58,077          | \$55,955 | \$54,740   | \$55,045        | \$55,534          | \$58,653       |
| Difference   | 2715     | 2322     | 2536     | 2006             | 2325              | 1861     | 3037       | 3139            | 2562              | 2121           |
| % Difference | 5.3%     | 4.2%     | 4.7%     | 3.3%             | 4.0%              | 3.3%     | 5.5%       | 5.7%            | 4.6%              | 3.6%           |
| Total Cost   |          |          |          |                  |                   |          |            |                 |                   |                |
| 1989         | \$76,582 | \$81,077 | \$80,810 | \$87,896         | \$84,533          | \$82,681 | \$80,327   | \$80,946        | \$78,972          | \$85,378       |
| 1988         | \$71,666 | \$76,851 | \$75,754 | \$85,137         | \$81,050          | \$78,542 | \$76,031   | \$76,232        | \$76,401          | \$82,080       |
| Difference   | 4916     | 4226     | 5056     | 2759             | 3483              | 4139     | 4296       | 4714            | 2571              | 3298           |
| % Difference | 6.9%     | 5.5%     | 6.7%     | 3.2%             | 4.3%              | 5.3%     | 5.7%       | 6.2%            | 3.4%              | 4.0%           |

2.0 SUMMARY OF FINDINGS FOR THE SINGLE - DETACHED DWELLING

TABLE SD. 4 : Comparative Costs Bar Chart 1988 - 1989



Labour

Material

# 2.0 SUMMARY OF FINDINGS FOR THE SINGLE-DETACHED DWELLING

TABLE SD. 5 : Comparative Total Building Costs 1981 -1989 (nominal dollars)

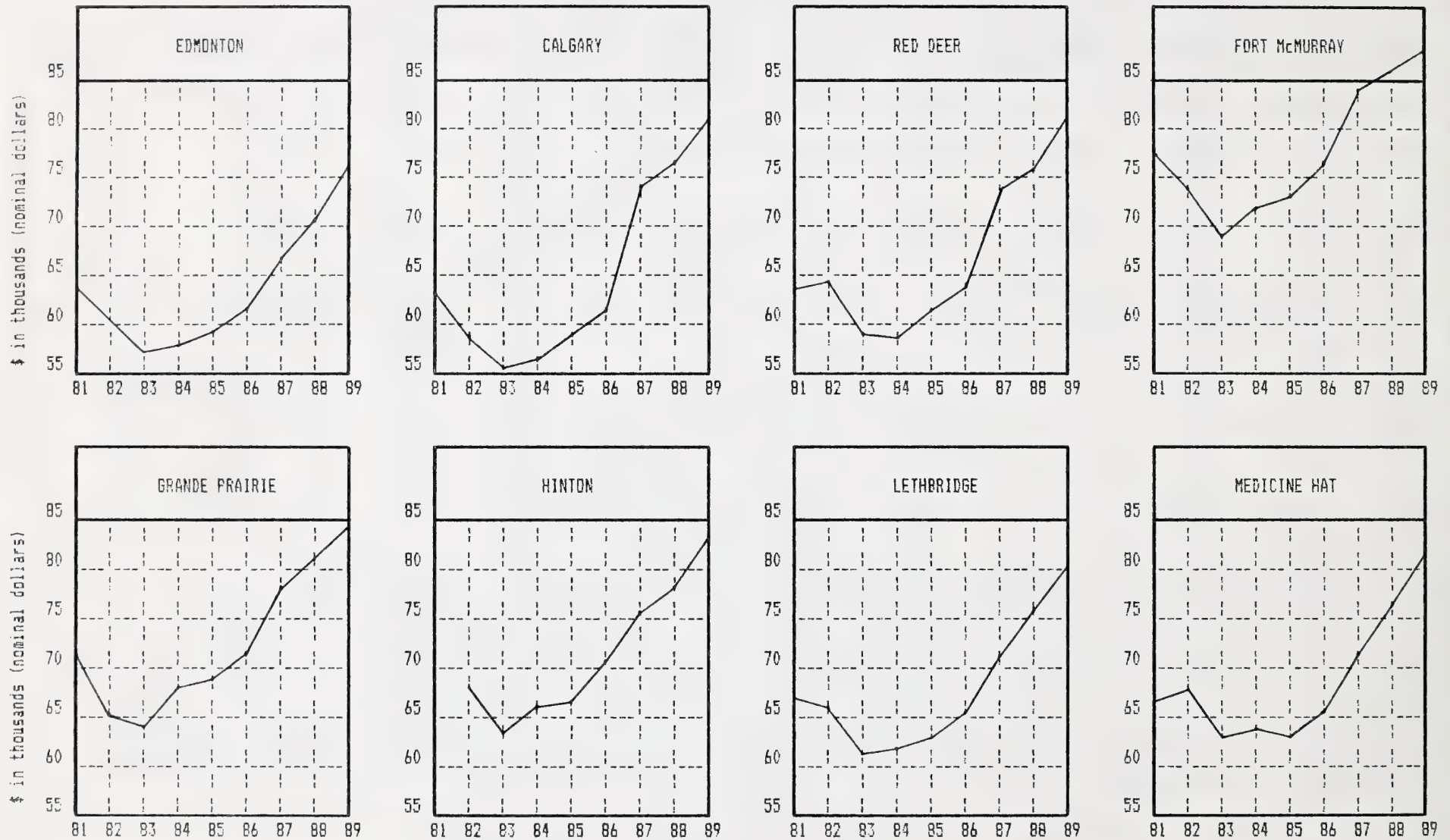
| YEAR | AVERAGE  | EDMONTON | CALGARY  | RED DEER | FORT<br>McMURRAY | GRANDE<br>PRAIRIE | *        | LETHBRIDGE | MEDICINE<br>HAT | **<br>LLOYD-<br>MINSTER | ***<br>PEACE<br>RIVER |
|------|----------|----------|----------|----------|------------------|-------------------|----------|------------|-----------------|-------------------------|-----------------------|
| 1981 | \$67,692 | \$63,888 | \$63,336 | \$64,249 | \$77,357         | \$71,449          | -        | \$67,057   | \$66,506        | -                       | -                     |
| 1982 | \$65,632 | \$60,374 | \$59,030 | \$64,697 | \$74,016         | \$65,145          | \$67,935 | \$66,489   | \$67,367        | -                       | -                     |
| 1983 | \$61,713 | \$57,170 | \$55,930 | \$59,116 | \$68,848         | \$64,732          | \$63,491 | \$61,493   | \$62,923        | -                       | -                     |
| 1984 | \$63,646 | \$57,256 | \$56,877 | \$58,496 | \$72,242         | \$68,194          | \$66,316 | \$62,010   | \$63,629        | \$67,798                | -                     |
| 1985 | \$64,852 | \$59,633 | \$59,754 | \$61,407 | \$72,913         | \$68,469          | \$66,661 | \$63,181   | \$63,250        | \$68,400                | -                     |
| 1986 | \$67,405 | \$62,079 | \$61,803 | \$63,733 | \$76,445         | \$71,932          | \$70,209 | \$65,231   | \$65,524        | \$69,692                | -                     |
| 1987 | \$74,644 | \$67,421 | \$74,588 | \$73,369 | \$84,110         | \$77,854          | \$75,871 | \$71,516   | \$72,150        | \$74,913                | -                     |
| 1988 | \$77,974 | \$71,666 | \$76,851 | \$75,754 | \$85,137         | \$81,050          | \$78,542 | \$76,031   | \$76,232        | \$76,401                | \$82,080              |
| 1989 | \$81,920 | \$76,582 | \$81,077 | \$80,810 | \$87,896         | \$84,533          | \$82,681 | \$80,327   | \$80,946        | \$78,972                | \$85,378              |

Notes : \* Hinton was not included in the 1981 study  
 \*\* Lloydminster was not included in the 1981 through 1983 studies  
 \*\*\* Peace River was not included in the 1981 through 1987 studies  
 >>> Costs for years prior to 1988 have been adjusted to apply to the split-level model used in the 1988 study instead of the bungalow used in previous years.



# 2.0 SUMMARY OF FINDINGS FOR THE SINGLE-DETACHED DWELLING

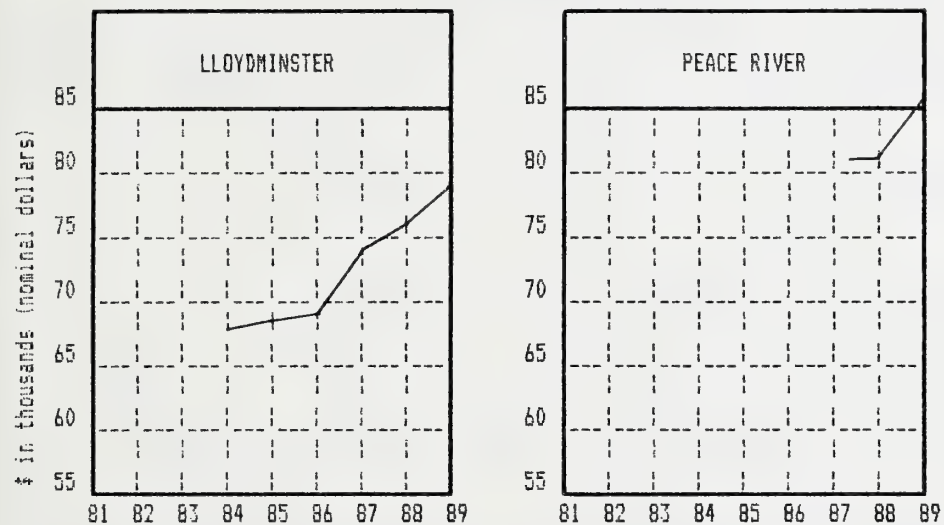
TABLE SD. 6 : Comparative Total Costs Graphs 1981 -1989 (nominal dollars)



Note: Costs for years prior to 1988 have been adjusted to apply to the split-level model used in the 1988 study instead of the bungalow used in previous years.

2.0 SUMMARY OF FINDINGS FOR THE SINGLE-DETACHED DWELLING

TABLE SD. 6 : Comparative Total Costs Graphs 1981 -1989 (nominal dollars) (cont'd)



2.0 SUMMARY OF FINDINGS FOR THE SINGLE-DETACHED DWELLING

TABLE SD. 7 : Comparative Total Building Costs 1981 -1989 (inflation adjusted dollars) \*

| YEAR | AVERAGE  | EDMONTON | CALGARY  | RED DEER | FORT<br>McMURRAY | GRANDE<br>PRAIRIE | **<br>HINTON | LETHBRIDGE | MEDICINE<br>HAT | ***<br>LLOYD-<br>MINSTER | ****<br>PEACE<br>RIVER |
|------|----------|----------|----------|----------|------------------|-------------------|--------------|------------|-----------------|--------------------------|------------------------|
| 1981 | \$97,058 | \$91,520 | \$90,902 | \$92,125 | \$110,815        | \$102,352         | -            | \$96,243   | \$95,452        | -                        | -                      |
| 1982 | \$85,121 | \$78,237 | \$76,642 | \$83,919 | \$95,917         | \$84,421          | \$88,036     | \$86,326   | \$87,466        | -                        | -                      |
| 1983 | \$74,195 | \$68,678 | \$67,316 | \$71,084 | \$82,706         | \$77,762          | \$76,271     | \$74,012   | \$75,733        | -                        | -                      |
| 1984 | \$76,512 | \$68,782 | \$68,456 | \$70,338 | \$86,784         | \$81,921          | \$79,665     | \$74,633   | \$76,583        | \$81,445                 | -                      |
| 1985 | \$75,847 | \$69,694 | \$69,968 | \$71,836 | \$85,214         | \$80,021          | \$77,907     | \$73,981   | \$74,062        | \$79,940                 | -                      |
| 1986 | \$75,855 | \$69,813 | \$69,634 | \$71,740 | \$85,968         | \$80,892          | \$78,955     | \$73,496   | \$73,827        | \$78,373                 | -                      |
| 1987 | \$80,862 | \$72,986 | \$80,898 | \$79,500 | \$91,051         | \$84,280          | \$82,133     | \$77,565   | \$78,254        | \$81,095                 | -                      |
| 1988 | \$82,005 | \$75,321 | \$80,924 | \$79,693 | \$89,479         | \$85,184          | \$82,548     | \$80,061   | \$80,272        | \$80,297                 | \$86,266               |
| 1989 | \$81,920 | \$76,582 | \$81,077 | \$80,810 | \$87,896         | \$84,533          | \$82,681     | \$80,327   | \$80,946        | \$78,972                 | \$85,378               |

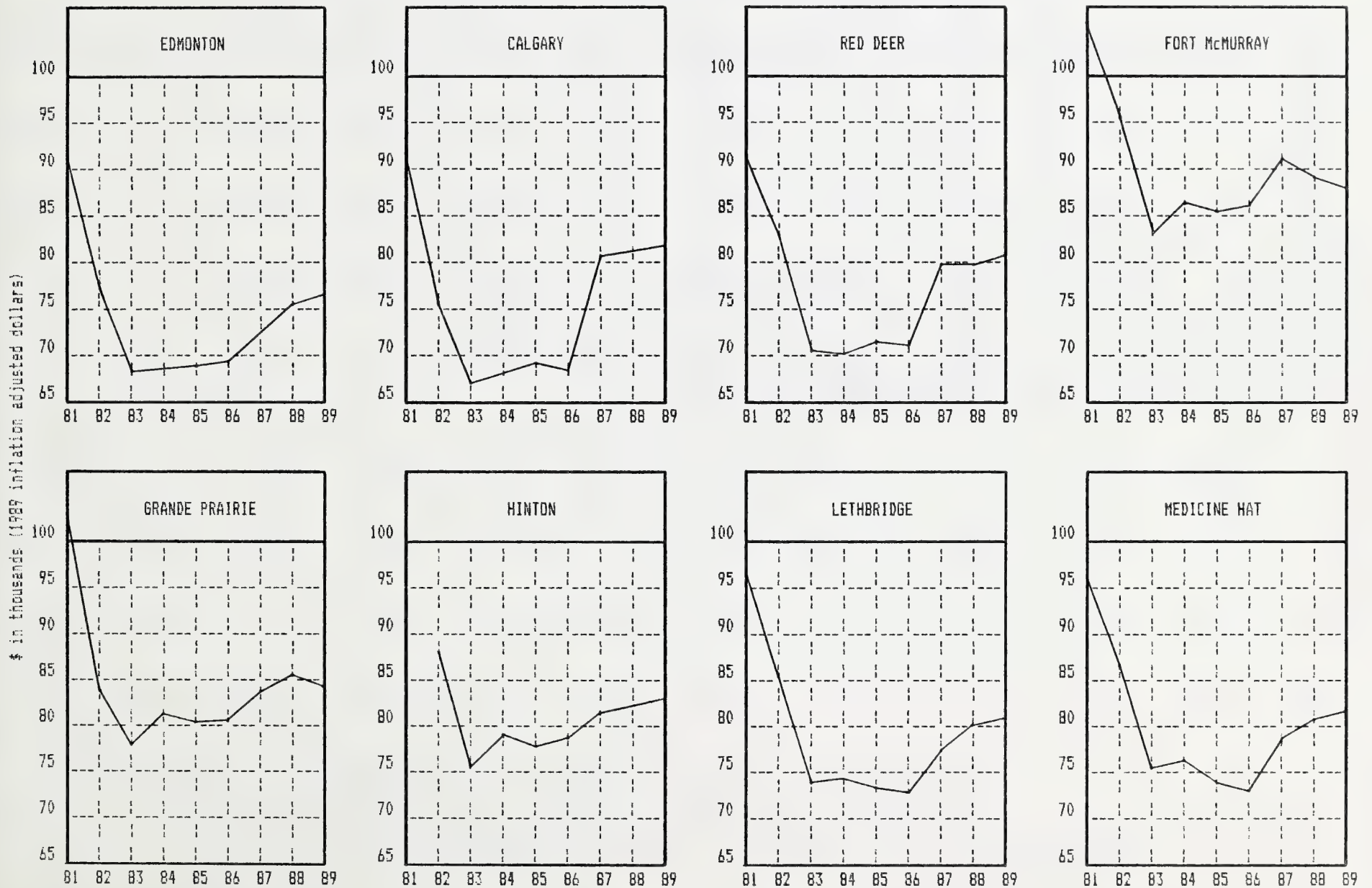
Notes :

- \* 1. Expressed in inflation adjusted, real 1989 dollars
- 2. Inflation adjustments have been based on the Consumer Price Index for Edmonton and Calgary.
- \*\* Hinton was not included in the 1981 study
- \*\*\* Lloydminster was not included in the 1981 through 1983 studies
- \*\*\*\* Peace River was not included in the 1981 through 1987 studies
- >>>> Costs for years prior to 1988 have been adjusted to apply to the split-level model used in the 1988 study instead of the bungalow used in previous years.



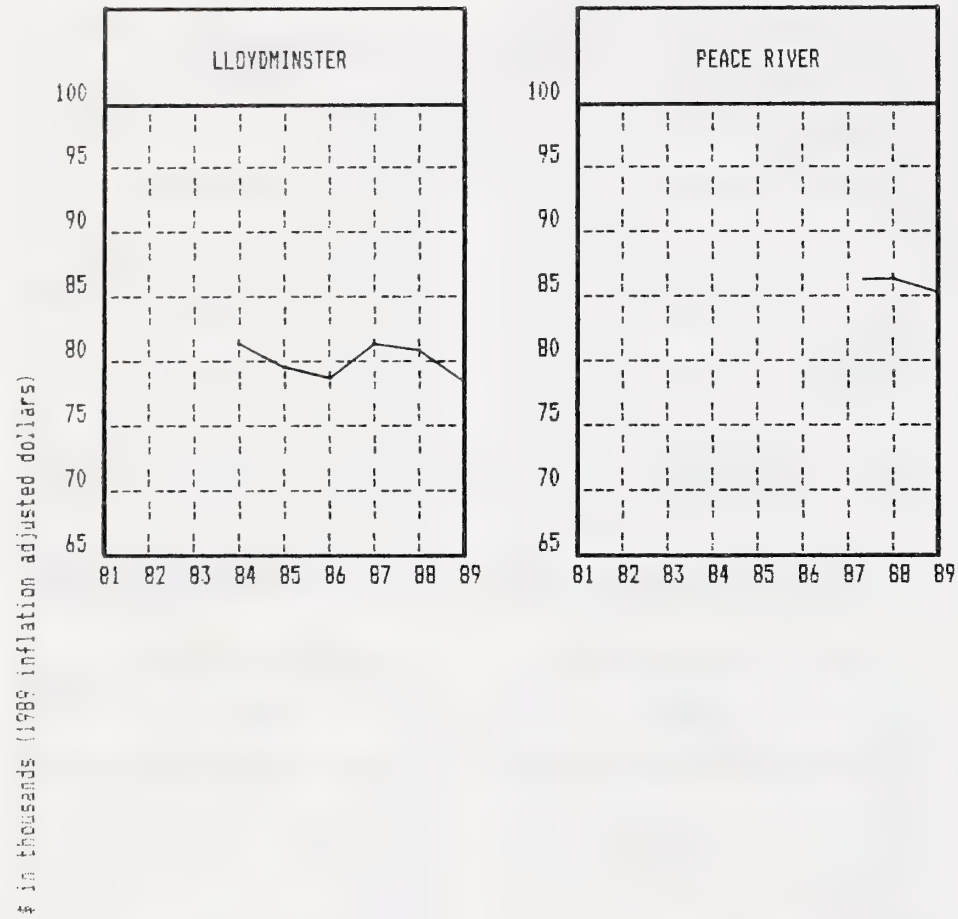
# 2.0 SUMMARY OF FINDINGS FOR THE SINGLE-DETACHED DWELLING

TABLE 5D. 8 : Comparative Total Cost Graphs 1981 -1989 (inflation adjusted dollars)



2.0 SUMMARY OF FINDINGS FOR THE SINGLE-DETACHED DWELLING

TABLE SD. 8 : Comparative Total Cost Graphs 1981 -1989 (inflation adjusted dollars) (cont'd)



2.0 SUMMARY OF FINDINGS FOR THE SINGLE-DETACHED DWELLING

TABLE SD. 9 : Comparative Costs per Square Foot of Gross Floor Area 1981 - 1989 (nominal dollars)

| YEAR | AVERAGE | EDMONTON | CALGARY | RED DEER | FORT<br>McMURRAY | GRANDE<br>PRAIRIE | *<br>HINTON | LETHBRIDGE | MEDICINE<br>HAT | **<br>LLOYD-<br>MINSTER | ***<br>PEACE<br>RIVER |
|------|---------|----------|---------|----------|------------------|-------------------|-------------|------------|-----------------|-------------------------|-----------------------|
| 1981 | \$41.66 | \$39.32  | \$38.98 | \$39.54  | \$47.60          | \$43.97           | -           | \$41.27    | \$40.93         | -                       | -                     |
| 1982 | \$40.39 | \$37.15  | \$36.33 | \$39.81  | \$45.55          | \$40.09           | \$41.81     | \$40.92    | \$41.46         | -                       | -                     |
| 1983 | \$37.98 | \$35.18  | \$34.42 | \$36.38  | \$42.37          | \$39.83           | \$39.07     | \$37.84    | \$38.72         | -                       | -                     |
| 1984 | \$39.17 | \$35.23  | \$35.00 | \$36.00  | \$44.46          | \$41.97           | \$40.81     | \$38.16    | \$39.16         | \$41.72                 | -                     |
| 1985 | \$39.91 | \$36.70  | \$36.77 | \$37.79  | \$44.87          | \$42.14           | \$41.02     | \$38.88    | \$38.92         | \$42.09                 | -                     |
| 1986 | \$41.48 | \$38.20  | \$38.03 | \$39.22  | \$47.04          | \$44.27           | \$43.21     | \$40.14    | \$40.32         | \$42.89                 | -                     |
| 1987 | \$45.93 | \$41.49  | \$45.90 | \$45.15  | \$51.76          | \$47.91           | \$46.69     | \$44.01    | \$44.40         | \$46.10                 | -                     |
| 1988 | \$47.97 | \$44.09  | \$47.28 | \$46.61  | \$52.38          | \$49.87           | \$48.32     | \$46.78    | \$46.90         | \$47.01                 | \$50.50               |
| 1989 | \$50.40 | \$47.12  | \$49.88 | \$49.72  | \$54.08          | \$52.01           | \$50.87     | \$49.42    | \$49.80         | \$48.59                 | \$52.53               |

Notes : \* Hinton was not included in the 1981 study  
 \*\* Lloydminster was not included in the 1981 through 1983 studies  
 \*\*\* Peace River was not included in the 1981 through 1987 studies  
 >>> Costs for years prior to 1988 have been adjusted to apply to the split-level model used in the 1988 study instead of the bungalow used in previous years.



2.0 SUMMARY OF FINDINGS FOR THE SINGLE-DETACHED DWELLING

TABLE SD. 10 : Comparative Costs per Square Foot of Gross Floor Area 1981 - 1989 (inflation adjusted dollars) \*

| YEAR | AVERAGE | EDMONTON | CALGARY | RED DEER | FORT<br>McMURRAY | GRANDE<br>PRAIRIE | **<br>HINTON | LETHBRIDGE | MEDICINE<br>HAT | ***<br>LLOYD-<br>MINSTER | ****<br>PEACE<br>RIVER |
|------|---------|----------|---------|----------|------------------|-------------------|--------------|------------|-----------------|--------------------------|------------------------|
| 1981 | \$59.71 | \$56.30  | \$55.92 | \$56.67  | \$68.17          | \$62.97           | -            | \$59.21    | \$58.72         | -                        | -                      |
| 1982 | \$52.37 | \$48.13  | \$47.15 | \$51.63  | \$59.01          | \$51.94           | \$54.16      | \$53.11    | \$53.81         | -                        | -                      |
| 1983 | \$45.64 | \$42.25  | \$41.41 | \$43.73  | \$50.88          | \$47.84           | \$46.92      | \$45.53    | \$46.59         | -                        | -                      |
| 1984 | \$47.07 | \$42.31  | \$42.11 | \$43.27  | \$53.39          | \$50.40           | \$49.01      | \$45.91    | \$47.11         | \$50.10                  | -                      |
| 1985 | \$46.66 | \$42.88  | \$43.04 | \$44.19  | \$52.42          | \$49.23           | \$47.93      | \$45.51    | \$45.56         | \$49.18                  | -                      |
| 1986 | \$46.66 | \$42.95  | \$42.84 | \$44.13  | \$52.88          | \$49.76           | \$48.57      | \$45.21    | \$45.42         | \$48.21                  | -                      |
| 1987 | \$49.75 | \$44.90  | \$49.77 | \$48.91  | \$56.01          | \$51.85           | \$50.53      | \$47.72    | \$48.14         | \$49.89                  | -                      |
| 1988 | \$50.45 | \$46.34  | \$49.78 | \$49.03  | \$55.05          | \$52.40           | \$50.78      | \$49.25    | \$49.38         | \$49.40                  | \$53.07                |
| 1989 | \$50.40 | \$47.12  | \$49.88 | \$49.72  | \$54.08          | \$52.01           | \$50.87      | \$49.42    | \$49.80         | \$48.59                  | \$52.53                |

Notes :

- \* 1. Expressed in inflation adjusted, real 1989 dollars
- 2. Inflation adjustments have been based on the Consumer Price Index for Edmonton and Calgary.
- \*\* Hinton was not included in the 1981 study
- \*\*\* Lloydminster was not included in the 1981 through 1983 studies
- \*\*\*\* Peace River was not included in the 1981 through 1987 studies
- >>>> Costs for years prior to 1988 have been adjusted to apply to the split-level model used in the 1988 study instead of the bungalow used in previous years.

2.0 SUMMARY OF FINDINGS FOR THE SINGLE-DETACHED DWELLING

TABLE SD. 11 : Trade Division Cost Summaries

| LOCATION                                    | EDMONTON | CALGARY  | RED DEER | FORT<br>McMURRAY | GRANDE<br>PRAIRIE | HINTON   | LETHBRIDGE | MEDICINE<br>HAT | LLOYD-<br>MINSTER | PEACE<br>RIVER |
|---------------------------------------------|----------|----------|----------|------------------|-------------------|----------|------------|-----------------|-------------------|----------------|
| Divisions                                   |          |          |          |                  |                   |          |            |                 |                   |                |
| 1. Excavation                               | 2,807    | 3,426    | 3,498    | 3,989            | 3,166             | 2,920    | 3,351      | 3,153           | 3,453             | 3,199          |
| 2. Concrete                                 | 9,685    | 9,856    | 10,060   | 11,826           | 11,224            | 11,415   | 10,077     | 10,903          | 10,352            | 10,493         |
| 3. Damproofing                              | 407      | 490      | 514      | 655              | 605               | 499      | 488        | 484             | 445               | 606            |
| 4. Siding                                   | 5,488    | 5,744    | 6,207    | 6,226            | 6,078             | 5,736    | 5,499      | 5,485           | 5,622             | 6,217          |
| 5. Roofing                                  | 1,798    | 1,956    | 1,920    | 1,873            | 1,936             | 1,736    | 1,806      | 1,855           | 1,588             | 2,008          |
| 6. Rough<br>Carpentry                       | 14,606   | 14,915   | 14,490   | 16,715           | 15,518            | 15,386   | 15,350     | 14,351          | 14,304            | 15,239         |
| 7. Finish<br>Carpentry                      | 2,140    | 2,217    | 2,065    | 2,219            | 2,077             | 2,009    | 2,092      | 2,075           | 2,023             | 2,175          |
| 8. Windows and<br>Glazing                   | 2,631    | 2,676    | 2,748    | 2,887            | 2,860             | 2,631    | 2,624      | 2,683           | 2,701             | 3,018          |
| 9. Sealants                                 | 63       | 77       | 69       | 69               | 70                | 64       | 61         | 65              | 60                | 70             |
| 10. Doors                                   | 3,273    | 3,271    | 3,495    | 3,579            | 3,772             | 3,516    | 3,399      | 3,385           | 3,531             | 3,889          |
| 11. Hardware                                | 416      | 440      | 421      | 440              | 427               | 424      | 438        | 432             | 411               | 432            |
| 12. Ceramic Tile NA (included in plumbing). |          |          |          |                  |                   |          |            |                 |                   |                |
| SUB - TOTAL                                 | \$43,314 | \$45,068 | \$45,487 | \$50,478         | \$47,733          | \$46,336 | \$45,185   | \$44,871        | \$44,490          | \$47,346       |

2.0 SUMMARY OF FINDINGS FOR THE SINGLE-DETACHED DWELLING

TABLE SD. 11 : Trade Division Cost Summaries (cont'd)

| LOCATION               | EDMONTON | CALGARY  | RED DEER | FORT<br>McMURRAY | GRANDE<br>PRAIRIE | HINTON   | LETHBRIDGE | MEDICINE<br>HAT | LLOYD-<br>MINSTER | PEACE<br>RIVER |
|------------------------|----------|----------|----------|------------------|-------------------|----------|------------|-----------------|-------------------|----------------|
| Divisions              |          |          |          |                  |                   |          |            |                 |                   |                |
| 13. Wallboard          | 5,124    | 5,632    | 5,325    | 6,275            | 5,900             | 5,903    | 5,519      | 5,557           | 5,626             | 6,239          |
| 14. Flooring           | 3,439    | 3,647    | 3,594    | 3,490            | 3,873             | 3,522    | 3,452      | 3,654           | 3,518             | 3,970          |
| 15. Painting           | 2,418    | 2,588    | 2,576    | 2,693            | 2,792             | 2,743    | 2,756      | 2,765           | 2,524             | 2,779          |
| 16. Fittings           | 4,219    | 4,494    | 4,494    | 4,846            | 4,432             | 4,367    | 4,753      | 4,662           | 4,304             | 4,840          |
| 17. Specialties        | 576      | 608      | 587      | 612              | 629               | 587      | 612        | 617             | 578               | 644            |
| 18. Appliances         | 112      | 130      | 117      | 132              | 139               | 123      | 135        | 135             | 127               | 140            |
| 19. Plumbing           | 5,720    | 6,360    | 6,150    | 6,335            | 6,220             | 6,200    | 5,690      | 5,815           | 5,530             | 6,435          |
| 20. Heating            | 2,550    | 2,840    | 2,895    | 3,270            | 3,215             | 3,150    | 2,605      | 3,005           | 2,835             | 3,330          |
| 21. Electrical         | 3,610    | 4,210    | 4,085    | 4,265            | 4,100             | 4,250    | 4,120      | 4,365           | 3,940             | 4,155          |
| 22. Site Over-<br>head | 5,500    | 5,500    | 5,500    | 5,500            | 5,500             | 5,500    | 5,500      | 5,500           | 5,500             | 5,500          |
| TOTAL                  | \$76,582 | \$81,077 | \$80,810 | \$87,896         | \$84,533          | \$82,681 | \$80,327   | \$80,946        | \$78,972          | \$85,378       |



### 3.0 SUMMARY OF FINDINGS FOR THE WALK-UP APARTMENT



3.0 SUMMARY OF FINDINGS FOR THE WALK-UP APARTMENT

TABLE WA. 1 : Total Building Costs

| ITEM               | EDMONTON  |       | CALGARY   |       | RED DEER  |       | FORT<br>McMURRAY |       | GRANDE<br>PRAIRIE |       | HINTON    |       | LETHBRIDGE |       | MEDICINE<br>HAT |       | LLOYDMINSTER |       | PEACE<br>RIVER |       |
|--------------------|-----------|-------|-----------|-------|-----------|-------|------------------|-------|-------------------|-------|-----------|-------|------------|-------|-----------------|-------|--------------|-------|----------------|-------|
| ELEMENT            | TOTAL     | %     | TOTAL     | %     | TOTAL     | %     | TOTAL            | %     | TOTAL             | %     | TOTAL     | %     | TOTAL      | %     | TOTAL           | %     | TOTAL        | %     | TOTAL          | %     |
|                    | \$        |       | \$        |       | \$        |       | \$               |       | \$                |       | \$        |       | \$         |       | \$              |       | \$           |       | \$             |       |
| Labour             | 277,437   | 35.5  | 285,392   | 36.0  | 291,534   | 36.2  | 315,371          | 36.0  | 309,972           | 36.0  | 306,812   | 36.1  | 280,749    | 35.1  | 286,400         | 35.2  | 281,390      | 34.2  | 314,612        | 35.8  |
| Material           | 503,490   | 64.5  | 507,013   | 64.0  | 513,211   | 63.8  | 559,754          | 64.0  | 551,813           | 64.0  | 542,823   | 63.9  | 519,219    | 64.9  | 526,137         | 64.8  | 541,646      | 65.8  | 564,677        | 64.2  |
| Total 1989         | 780,927   | 100.0 | 792,405   | 100.0 | 804,745   | 100.0 | 875,125          | 100.0 | 861,785           | 100.0 | 849,635   | 100.0 | 799,968    | 100.0 | 812,537         | 100.0 | 823,036      | 100.0 | 879,289        | 100.0 |
| Cost per m2        | \$420.53  |       | \$426.71  |       | \$433.36  |       | \$471.26         |       | \$464.07          |       | \$457.53  |       | \$430.79   |       | \$437.55        |       | \$443.21     |       | \$473.50       |       |
| Cost per SF        | \$39.07   |       | \$39.64   |       | \$40.26   |       | \$43.78          |       | \$43.11           |       | \$42.51   |       | \$40.02    |       | \$40.65         |       | \$41.18      |       | \$43.99        |       |
| Cost per Apt. 1989 | \$32,539  |       | \$33,017  |       | \$33,531  |       | \$36,464         |       | \$35,908          |       | \$35,401  |       | \$33,332   |       | \$33,856        |       | \$34,293     |       | \$36,637       |       |
| Total 1988         | \$725,982 |       | \$744,420 |       | \$747,455 |       | \$847,835        |       | \$820,045         |       | \$799,979 |       | \$753,539  |       | \$758,448       |       | \$790,103    |       | \$837,124      |       |
| Cost per Apt. 1988 | \$30,249  |       | \$31,018  |       | \$31,144  |       | \$35,326         |       | \$34,169          |       | \$33,332  |       | \$31,397   |       | \$31,602        |       | \$32,921     |       | \$34,880       |       |
| Changes From 1988  | 7.6%      |       | 6.4%      |       | 7.7%      |       | 3.2%             |       | 5.1%              |       | 6.2%      |       | 6.2%       |       | 7.1%            |       | 4.2%         |       | 5.0%           |       |

Note : Several total figures may appear in this report as not being added correctly. This is due to the rounding effect in the calculations of the detail costing for each centre.



## 3.0 SUMMARY OF FINDINGS FOR THE WALK-UP APARTMENT

TABLE WA. 2 : Comparative Costs Ratios \*

| LOCATION          | EDMONTON | CALGARY | RED DEER | FORT<br>McMURRAY | GRANDE<br>PRAIRIE | HINTON | LETHBRIDGE | MEDICINE<br>HAT | LLOYD-<br>MINSTER | PEACE<br>RIVER |
|-------------------|----------|---------|----------|------------------|-------------------|--------|------------|-----------------|-------------------|----------------|
| EDMONTON          | 1.00     | 1.01    | 1.03     | 1.12             | 1.10              | 1.09   | 1.02       | 1.04            | 1.05              | 1.13           |
| CALGARY           | 0.99     | 1.00    | 1.02     | 1.10             | 1.09              | 1.07   | 1.01       | 1.03            | 1.04              | 1.11           |
| RED DEER          | 0.97     | 0.98    | 1.00     | 1.09             | 1.07              | 1.06   | 0.99       | 1.01            | 1.02              | 1.08           |
| FORT<br>McMURRAY  | 0.89     | 0.91    | 0.92     | 1.00             | 0.98              | 0.97   | 0.91       | 0.93            | 0.94              | 1.00           |
| GRANDE<br>PRAIRIE | 0.91     | 0.92    | 0.93     | 1.02             | 1.00              | 0.99   | 0.93       | 0.94            | 0.96              | 1.02           |
| HINTON            | 0.92     | 0.93    | 0.95     | 1.03             | 1.01              | 1.00   | 0.94       | 0.96            | 0.97              | 1.03           |
| LETHBRIDGE        | 0.98     | 0.99    | 1.01     | 1.09             | 1.08              | 1.06   | 1.00       | 1.02            | 1.03              | 1.10           |
| MEDICINE<br>HAT   | 0.96     | 0.98    | 0.99     | 1.08             | 1.06              | 1.05   | 0.98       | 1.00            | 1.04              | 1.08           |
| LLOYD-<br>MINSTER | 0.95     | 0.96    | 0.98     | 1.06             | 1.05              | 1.03   | 0.97       | 0.99            | 1.00              | 1.07           |
| PEACE<br>RIVER    | 0.89     | 0.90    | 0.92     | 1.00             | 0.98              | 0.97   | 0.91       | 0.92            | 0.94              | 1.00           |

\* Entries refer to the ratio of the price for a city in the top row of the table divided by a price for the city listed in the column. For example, Red Deer costs are 1.03 times Edmonton costs.

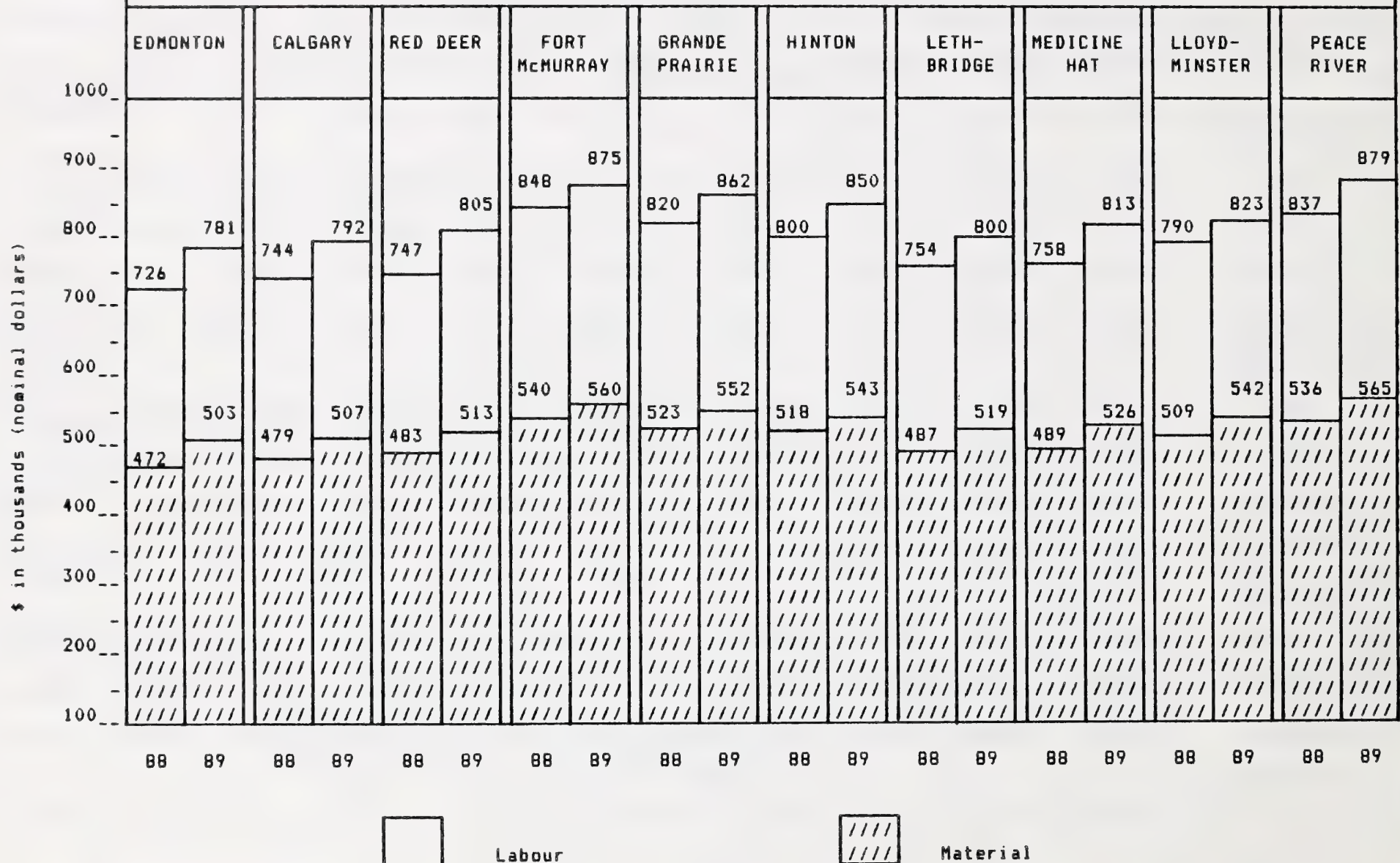
### 3.0 SUMMARY OF FINDINGS FOR THE WALK-UP APARTMENT

TABLE WA. 3 : Comparative Costs Table 1988 - 1989

| LOCATION     | EDMONTON  | CALGARY   | RED DEER  | FORT<br>McMURRAY | GRANDE<br>PRAIRIE | HINTON    | LETHBRIDGE | MEDICINE<br>HAT | LLOYD-<br>MINSTER | PEACE<br>RIVER |
|--------------|-----------|-----------|-----------|------------------|-------------------|-----------|------------|-----------------|-------------------|----------------|
| Labour Cost  |           |           |           |                  |                   |           |            |                 |                   |                |
| 1989         | \$277,437 | \$285,392 | \$291,534 | \$315,371        | \$309,972         | \$306,812 | \$280,749  | \$286,400       | \$281,390         | \$314,612      |
| 1988         | \$253,906 | \$265,108 | \$264,349 | \$308,027        | \$296,731         | \$282,472 | \$266,530  | \$269,116       | \$281,377         | \$301,150      |
| Difference   | \$23,531  | \$20,284  | \$27,185  | \$7,344          | \$13,241          | \$24,340  | \$14,219   | \$17,284        | \$13              | \$13,462       |
| % Difference | 9.3%      | 7.7%      | 10.3%     | 2.4%             | 4.5%              | 8.6%      | 5.3%       | 6.4%            | 0.0%              | 4.5%           |
| Mat'l Cost   |           |           |           |                  |                   |           |            |                 |                   |                |
| 1989         | \$503,490 | \$507,013 | \$513,211 | \$559,754        | \$551,813         | \$542,823 | \$519,219  | \$526,137       | \$541,646         | \$564,677      |
| 1988         | \$472,076 | \$479,312 | \$483,106 | \$539,808        | \$523,314         | \$517,507 | \$487,009  | \$489,332       | \$508,726         | \$535,974      |
| Difference   | \$31,414  | \$27,701  | \$30,105  | \$19,946         | \$28,499          | \$25,316  | \$32,210   | \$36,805        | \$32,920          | \$28,703       |
| % Difference | 6.7%      | 5.8%      | 6.2%      | 3.7%             | 5.4%              | 4.9%      | 6.6%       | 7.5%            | 6.5%              | 5.4%           |
| Total Cost   |           |           |           |                  |                   |           |            |                 |                   |                |
| 1989         | \$780,927 | \$792,405 | \$804,745 | \$875,125        | \$861,785         | \$849,635 | \$799,968  | \$812,537       | \$823,036         | \$879,289      |
| 1988         | \$725,982 | \$744,420 | \$747,455 | \$847,835        | \$820,045         | \$799,979 | \$753,539  | \$758,448       | \$790,103         | \$837,124      |
| Difference   | \$54,945  | \$47,985  | \$57,290  | \$27,290         | \$41,740          | \$49,656  | \$46,429   | \$54,089        | \$32,933          | \$42,165       |
| % Difference | 7.6%      | 6.4%      | 7.7%      | 3.2%             | 5.1%              | 6.2%      | 6.2%       | 7.1%            | 4.2%              | 5.0%           |

### 3.0 SUMMARY OF FINDINGS FOR THE WALK - UP APARTMENT

TABLE WA. 4 : Comparative Costs Bar Chart 1988 - 1989





### 3.0 SUMMARY OF FINDINGS FOR THE WALK-UP APARTMENT

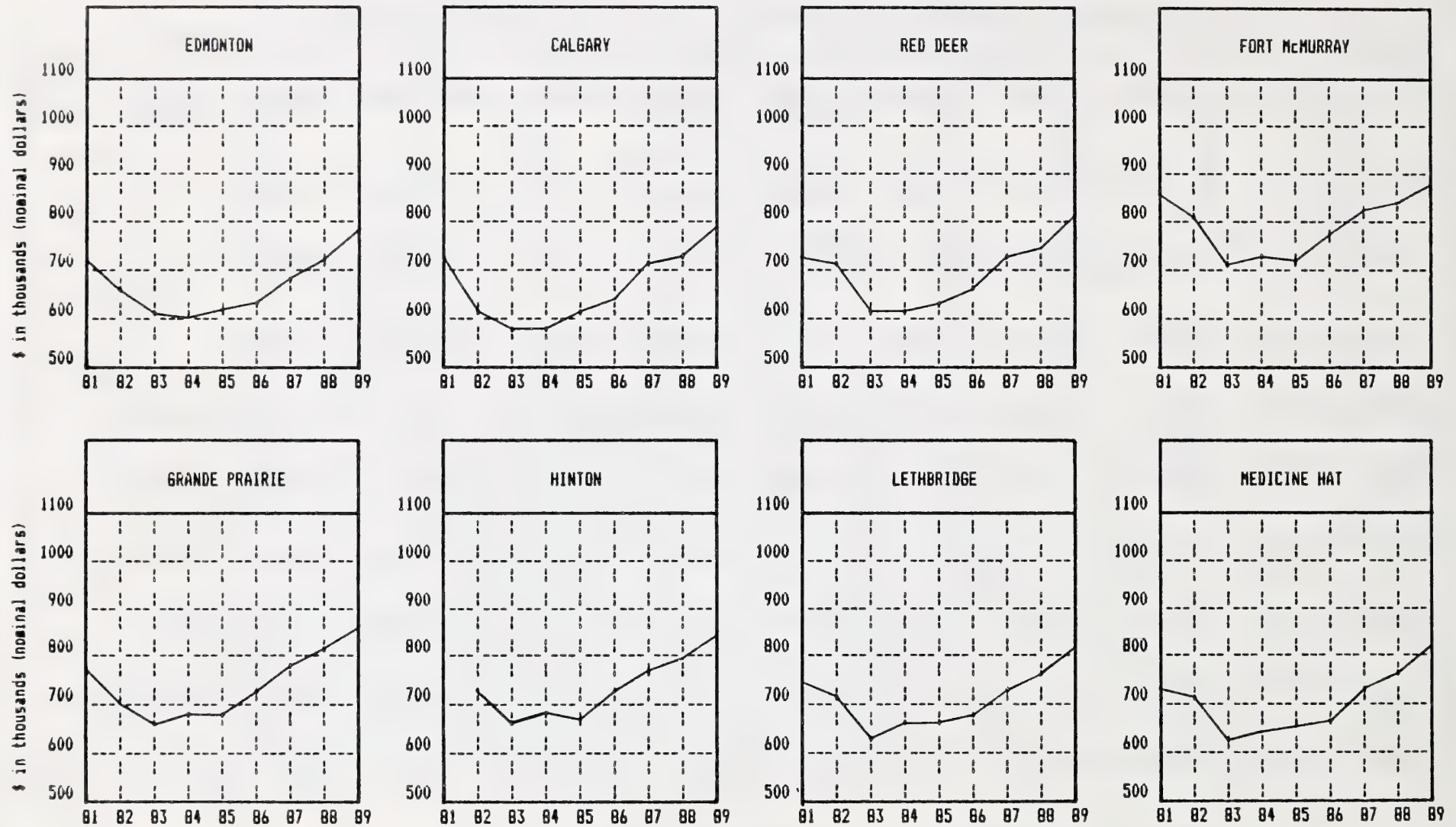
TABLE WA. 5 : Comparative Total Building Costs 1981 -1989 (nominal dollars)

| YEAR | AVERAGE   | EDMONTON  | CALGARY   | RED DEER  | FORT<br>McMURRAY | GRANDE<br>PRAIRIE | *<br>HINTON | LETHBRIDGE | MEDICINE<br>HAT | **<br>LLOYD-<br>MINSTER | ***<br>PEACE<br>RIVER |
|------|-----------|-----------|-----------|-----------|------------------|-------------------|-------------|------------|-----------------|-------------------------|-----------------------|
| 1981 | \$756,703 | \$714,492 | \$719,003 | \$733,211 | \$861,728        | \$784,409         | -           | \$740,084  | \$743,992       | -                       | -                     |
| 1982 | \$712,232 | \$665,273 | \$627,844 | \$710,485 | \$805,134        | \$700,436         | \$744,686   | \$720,280  | \$723,716       | -                       | -                     |
| 1983 | \$644,459 | \$603,046 | \$592,174 | \$623,852 | \$712,262        | \$669,574         | \$674,046   | \$632,872  | \$647,845       | -                       | -                     |
| 1984 | \$658,084 | \$600,039 | \$591,861 | \$624,342 | \$731,995        | \$694,794         | \$693,688   | \$632,121  | \$652,014       | \$701,901               | -                     |
| 1985 | \$669,882 | \$625,974 | \$617,049 | \$644,466 | \$734,420        | \$695,480         | \$690,526   | \$651,143  | \$655,347       | \$714,537               | -                     |
| 1986 | \$699,967 | \$648,534 | \$647,135 | \$665,963 | \$778,075        | \$742,644         | \$731,043   | \$679,312  | \$676,195       | \$730,802               | -                     |
| 1987 | \$754,246 | \$693,517 | \$724,502 | \$734,041 | \$830,902        | \$791,155         | \$776,523   | \$728,692  | \$731,429       | \$777,454               | -                     |
| 1988 | \$782,493 | \$725,982 | \$744,420 | \$747,455 | \$847,835        | \$820,045         | \$799,979   | \$753,539  | \$758,448       | \$790,103               | \$837,124             |
| 1989 | \$827,945 | \$780,927 | \$792,405 | \$804,745 | \$875,125        | \$861,785         | \$849,635   | \$799,968  | \$812,537       | \$823,036               | \$879,289             |

Notes : \* Hinton was not included in the 1981 study  
 \*\* Lloydminster was not included in the 1981 through 1983 studies  
 \*\*\* Peace River was not included in the 1981 through 1987 studies

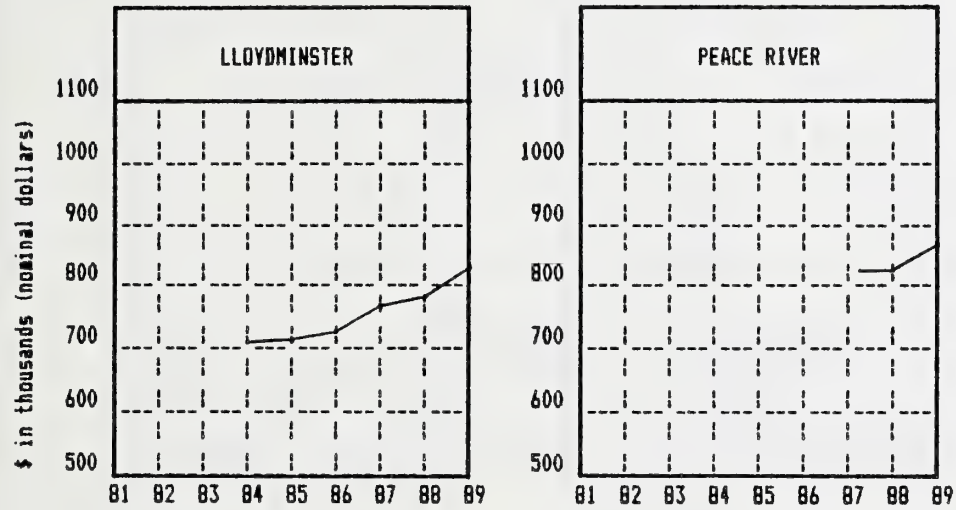
3.0 SUMMARY OF FINDINGS FOR THE WALK-UP APARTMENT

TABLE WA. 6 : Comparative Total Costs Graphs 1981 -1989 (nominal dollars)



3.0 SUMMARY OF FINDINGS FOR THE WALK-UP APARTMENT

TABLE WA. 6 : Comparative Total Costs Graphs 1981 -1989 (nominal dollars) (cont'd)



### 3.0 SUMMARY OF FINDINGS FOR THE WALK-UP APARTMENT

TABLE WA. 7 : Comparative Costs per Apartment Unit 1981 -1989 (nominal dollars)

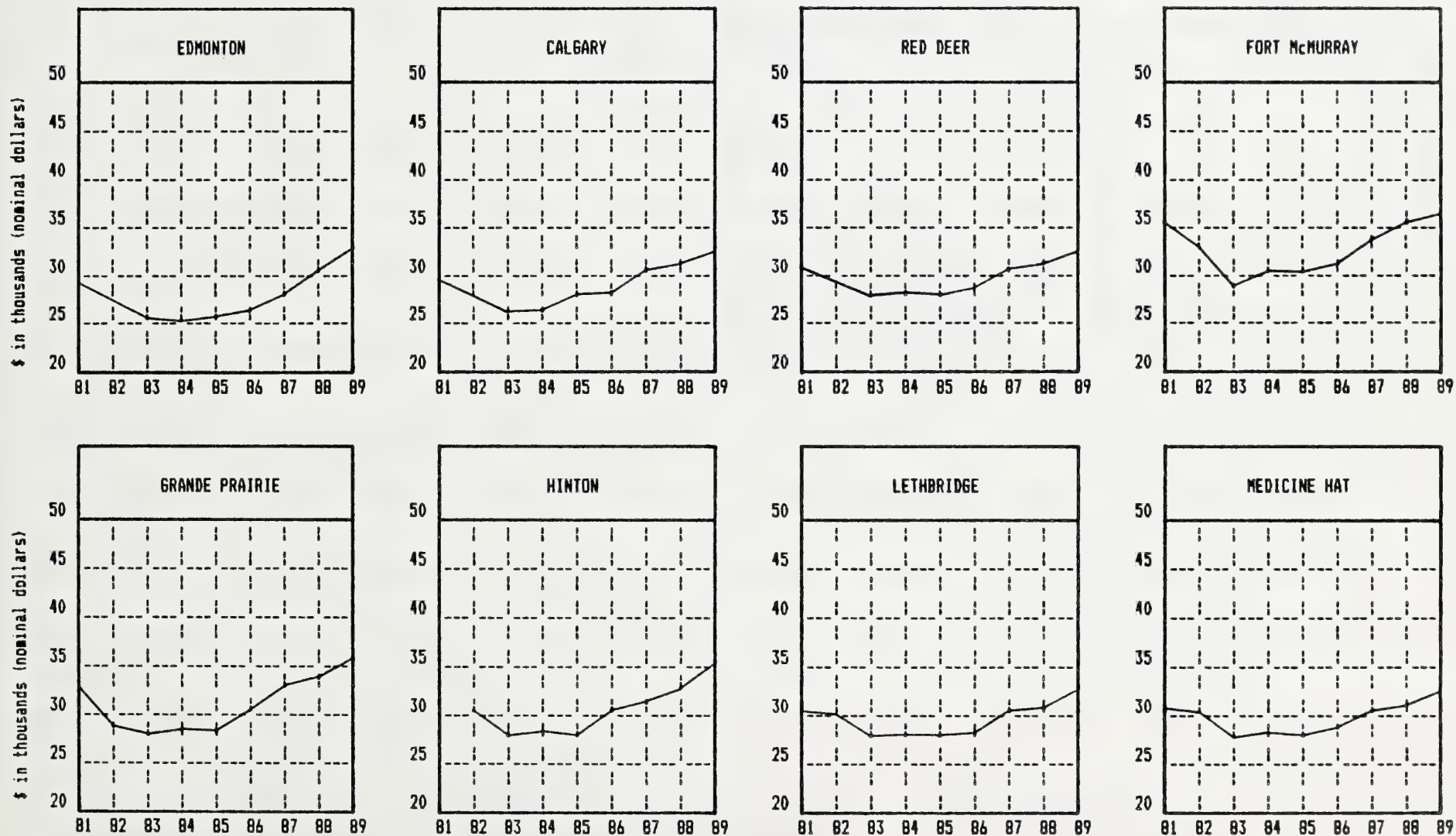
| YEAR | AVERAGE  | EDMONTON | CALGARY  | RED DEER | FORT<br>McMURRAY | GRANDE<br>PRAIRIE | *<br>HINTON | LETHBRIDGE | MEDICINE<br>HAT | **<br>LLOYD-<br>MINSTER | ***<br>PEACE<br>RIVER |
|------|----------|----------|----------|----------|------------------|-------------------|-------------|------------|-----------------|-------------------------|-----------------------|
| 1981 | \$31,529 | \$29,771 | \$29,958 | \$30,550 | \$35,905         | \$32,684          | -           | \$30,837   | \$31,000        | -                       | -                     |
| 1982 | \$29,677 | \$27,720 | \$26,160 | \$29,604 | \$33,547         | \$29,185          | \$31,029    | \$30,012   | \$30,155        | -                       | -                     |
| 1983 | \$26,853 | \$25,127 | \$24,674 | \$25,994 | \$29,678         | \$27,899          | \$28,085    | \$26,370   | \$26,994        | -                       | -                     |
| 1984 | \$27,420 | \$25,002 | \$24,661 | \$26,014 | \$30,500         | \$28,950          | \$28,904    | \$26,338   | \$27,167        | \$29,246                | -                     |
| 1985 | \$27,912 | \$26,082 | \$25,710 | \$26,853 | \$30,601         | \$28,978          | \$28,772    | \$27,131   | \$27,306        | \$29,772                | -                     |
| 1986 | \$29,165 | \$27,022 | \$26,964 | \$27,748 | \$32,420         | \$30,944          | \$30,460    | \$28,305   | \$28,175        | \$30,450                | -                     |
| 1987 | \$31,427 | \$28,897 | \$30,188 | \$30,585 | \$34,621         | \$32,965          | \$32,355    | \$30,362   | \$30,476        | \$32,394                | -                     |
| 1988 | \$32,604 | \$30,249 | \$31,018 | \$31,144 | \$35,326         | \$34,169          | \$33,332    | \$31,397   | \$31,602        | \$32,921                | \$34,880              |
| 1989 | \$34,498 | \$32,539 | \$33,017 | \$33,531 | \$36,464         | \$35,908          | \$35,401    | \$33,332   | \$33,856        | \$34,293                | \$36,637              |

Notes : \* Hinton was not included in the 1981 study  
 \*\* Lloydminster was not included in the 1981 through 1983 studies  
 \*\*\* Peace River was not included in the 1981 through 1987 studies



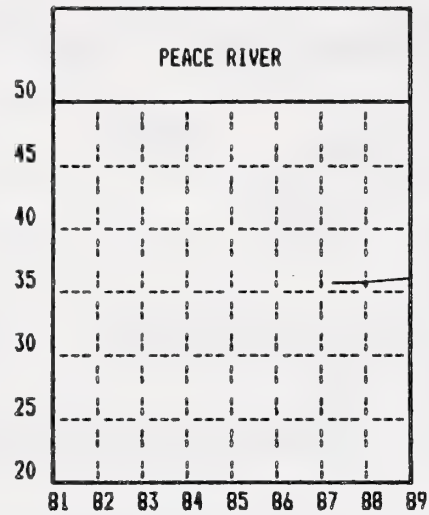
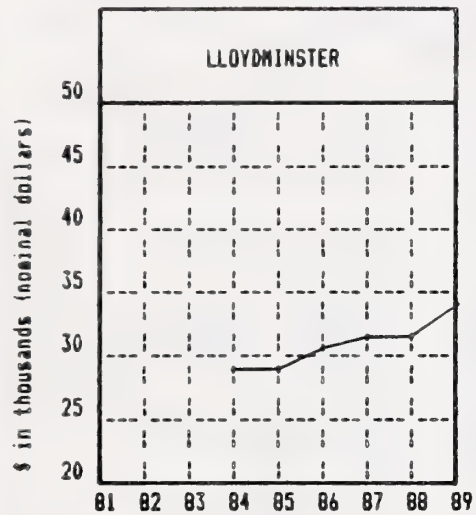
### 3.0 SUMMARY OF FINDINGS FOR THE WALK-UP APARTMENT

TABLE WA. 8 : Comparative Apartment Unit Costs Graphs 1981 -1989 (nominal dollars)



3.0 SUMMARY OF FINDINGS FOR THE WALK-UP APARTMENT

TABLE WA. 8 : Comparative Apartment Unit Costs Graphs 1981 -1989 (nominal dollars) (cont'd)



### 3.0 SUMMARY OF FINDINGS FOR THE WALK-UP APARTMENT

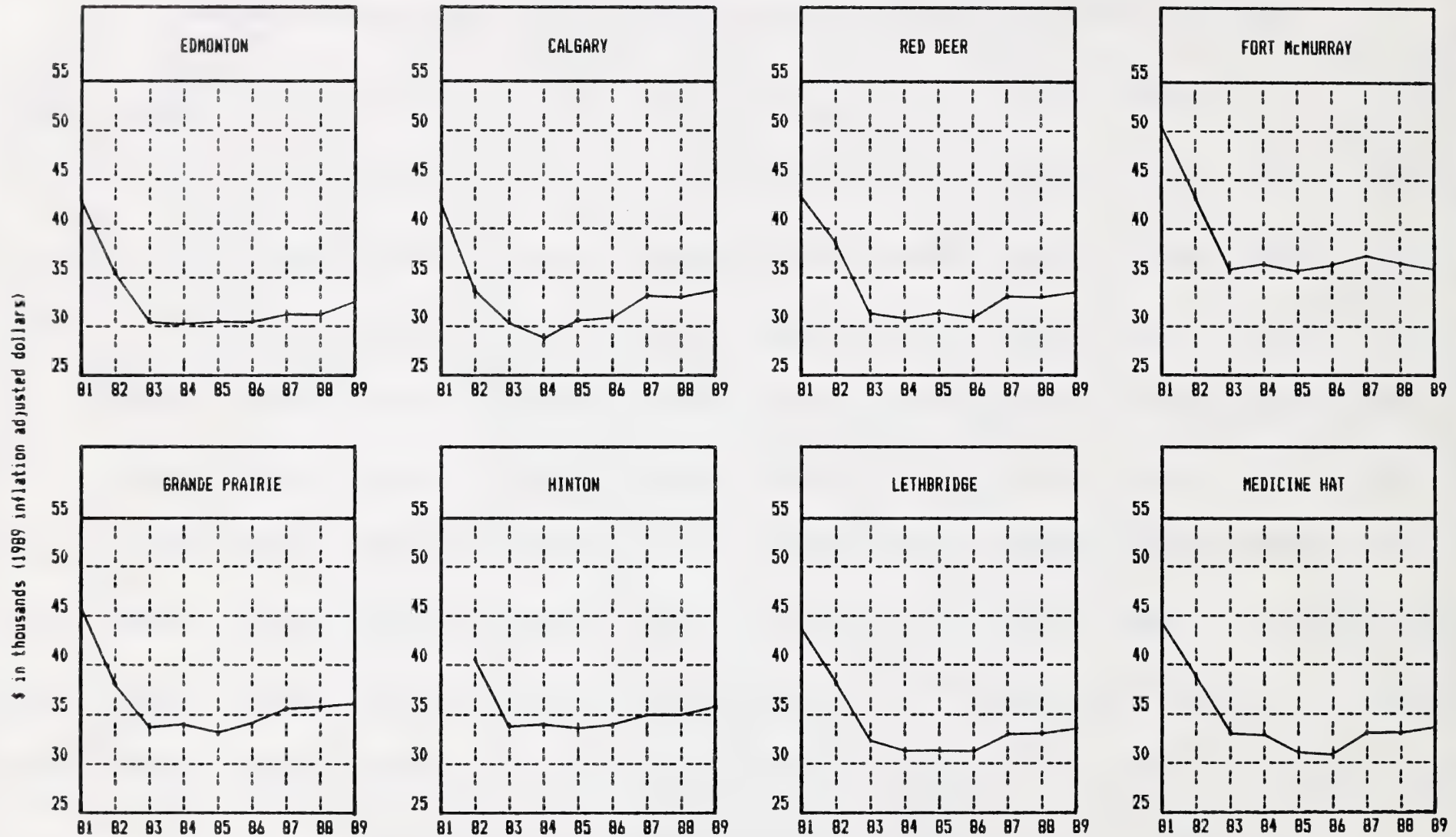
TABLE WA. 9 : Comparative Costs per Apartment Unit 1981 -1989 (inflation adjusted dollars) \*

| YEAR | AVERAGE  | EDMONTON | CALGARY  | RED DEER | FORT<br>McMURRAY | GRANDE<br>PRAIRIE | **<br>HINTON | LETHBRIDGE | MEDICINE<br>HAT | ***<br>LLOYD-<br>MINSTER | ****<br>PEACE<br>RIVER |
|------|----------|----------|----------|----------|------------------|-------------------|--------------|------------|-----------------|--------------------------|------------------------|
| 1981 | \$45,208 | \$42,647 | \$42,997 | \$43,805 | \$51,435         | \$46,820          | -            | \$44,259   | \$44,492        | -                        | -                      |
| 1982 | \$38,489 | \$35,922 | \$33,965 | \$38,400 | \$43,473         | \$37,820          | \$40,210     | \$38,966   | \$39,152        | -                        | -                      |
| 1983 | \$33,075 | \$30,925 | \$30,424 | \$32,022 | \$36,525         | \$34,336          | \$34,565     | \$32,516   | \$33,285        | -                        | -                      |
| 1984 | \$32,963 | \$30,034 | \$29,682 | \$31,280 | \$36,640         | \$34,778          | \$34,722     | \$31,700   | \$32,698        | \$35,132                 | -                      |
| 1985 | \$32,644 | \$30,482 | \$30,105 | \$31,414 | \$35,763         | \$33,867          | \$33,626     | \$31,769   | \$31,973        | \$34,794                 | -                      |
| 1986 | \$32,822 | \$30,389 | \$30,380 | \$31,234 | \$36,458         | \$34,799          | \$34,254     | \$31,891   | \$31,745        | \$34,244                 | -                      |
| 1987 | \$34,045 | \$31,282 | \$32,742 | \$33,141 | \$37,479         | \$35,686          | \$35,026     | \$32,930   | \$33,054        | \$35,068                 | -                      |
| 1988 | \$34,289 | \$31,792 | \$32,662 | \$32,763 | \$37,128         | \$35,912          | \$35,032     | \$33,061   | \$33,277        | \$34,600                 | \$36,659               |
| 1989 | \$34,498 | \$32,539 | \$33,017 | \$33,531 | \$36,464         | \$35,908          | \$35,401     | \$33,332   | \$33,856        | \$34,293                 | \$36,637               |

- Notes : \*
- Expressed in inflation adjusted, real 1989 dollars
  - Inflation adjustments have been based on the Consumer Price Index for Edmonton and Calgary
- \*\* Hinton was not included in the 1981 study
- \*\*\* Lloydminster was not included in the 1981 through 1983 studies
- \*\*\*\* Peace River was not included in the 1981 through 1987 studies

### 3.0 SUMMARY OF FINDINGS FOR THE WALK-UP APARTMENT

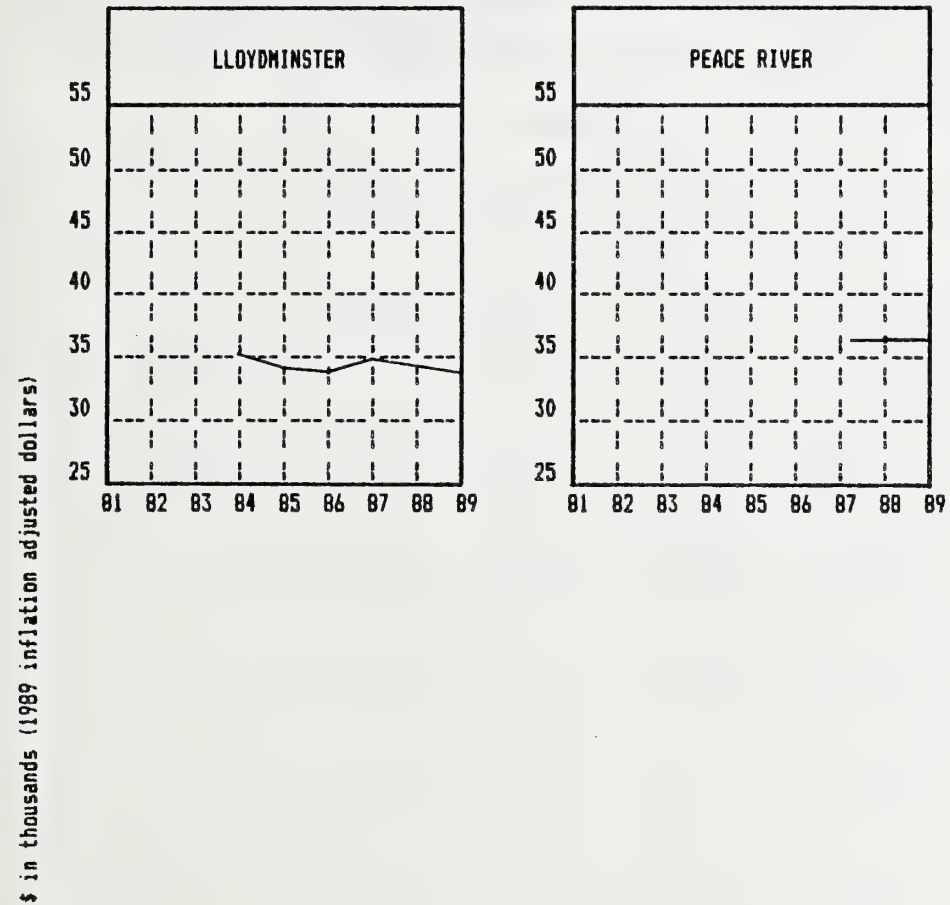
TABLE WA. 10 : Comparative Apartment Unit Costs Graphs 1981 -1989 (inflation adjusted dollars)





3.0 SUMMARY OF FINDINGS FOR THE WALK-UP APARTMENT

TABLE WA. 10 : Comparative Apartment Unit Costs Graphs 1981 -1989 (inflation adjusted dollars) (cont'd)



### 3.0 SUMMARY OF FINDINGS FOR THE WALK-UP APARTMENT

TABLE WA. 11 : Comparative Costs per Square Foot of Gross Floor Area 1981 -1989 (nominal dollars)

| YEAR | AVERAGE | EDMONTON | CALGARY | RED DEER | FORT<br>McMURRAY | GRANDE<br>PRAIRIE | *<br>HINTON | LETHBRIDGE | MEDICINE<br>HAT | **<br>LLOYD-<br>MINSTER | ***<br>PEACE<br>RIVER |
|------|---------|----------|---------|----------|------------------|-------------------|-------------|------------|-----------------|-------------------------|-----------------------|
| 1981 | \$37.86 | \$35.75  | \$35.97 | \$36.68  | \$43.11          | \$39.24           | -           | \$37.03    | \$37.22         | -                       | -                     |
| 1982 | \$35.63 | \$33.28  | \$31.41 | \$35.54  | \$40.28          | \$35.04           | \$37.26     | \$36.03    | \$36.21         | -                       | -                     |
| 1983 | \$32.24 | \$30.17  | \$29.63 | \$31.21  | \$35.63          | \$33.50           | \$33.72     | \$31.66    | \$32.41         | -                       | -                     |
| 1984 | \$32.92 | \$30.02  | \$29.61 | \$31.23  | \$36.62          | \$34.76           | \$34.70     | \$31.62    | \$32.62         | \$35.11                 | -                     |
| 1985 | \$33.51 | \$31.32  | \$30.87 | \$32.24  | \$36.74          | \$34.79           | \$34.55     | \$32.58    | \$32.79         | \$35.75                 | -                     |
| 1986 | \$35.02 | \$32.44  | \$32.37 | \$33.32  | \$38.93          | \$37.15           | \$36.57     | \$33.98    | \$33.83         | \$36.56                 | -                     |
| 1987 | \$37.73 | \$34.70  | \$36.25 | \$36.72  | \$41.57          | \$39.58           | \$38.85     | \$36.46    | \$36.59         | \$38.89                 | -                     |
| 1988 | \$39.15 | \$36.32  | \$37.24 | \$37.39  | \$42.42          | \$41.03           | \$40.02     | \$37.70    | \$37.94         | \$39.53                 | \$41.88               |
| 1989 | \$41.42 | \$39.07  | \$39.64 | \$40.26  | \$43.78          | \$43.11           | \$42.51     | \$40.02    | \$40.65         | \$41.18                 | \$43.99               |

Notes : \* Hinton was not included in the 1981 study  
 \*\* Lloydminster was not included in the 1981 through 1983 studies  
 \*\*\* Peace River was not included in the 1981 through 1987 studies

### 3.0 SUMMARY OF FINDINGS FOR THE WALK-UP APARTMENT

TABLE WA. 12 : Comparative Costs per Square Foot of Gross Floor Area 1981 -1989 (inflation adjusted dollars) \*

| YEAR | AVERAGE | EDMONTON | CALGARY | RED DEER | FORT<br>McMURRAY | GRANDE<br>PRAIRIE | **<br>HINTON | LETHBRIDGE | MEDICINE<br>HAT | ***<br>LLOYD-<br>MINSTER | ****<br>PEACE<br>RIVER |
|------|---------|----------|---------|----------|------------------|-------------------|--------------|------------|-----------------|--------------------------|------------------------|
| 1981 | \$54.28 | \$51.20  | \$51.62 | \$52.59  | \$61.75          | \$56.21           | -            | \$53.14    | \$53.42         | -                        | -                      |
| 1982 | \$46.21 | \$43.13  | \$40.78 | \$46.10  | \$52.19          | \$45.41           | \$48.27      | \$46.78    | \$47.00         | -                        | -                      |
| 1983 | \$39.71 | \$37.13  | \$36.53 | \$38.44  | \$43.85          | \$41.22           | \$41.50      | \$39.04    | \$39.96         | -                        | -                      |
| 1984 | \$39.58 | \$36.06  | \$35.64 | \$37.55  | \$43.99          | \$41.75           | \$41.69      | \$38.06    | \$39.26         | \$42.18                  | -                      |
| 1985 | \$39.19 | \$36.60  | \$36.14 | \$37.71  | \$42.94          | \$40.66           | \$40.37      | \$38.14    | \$38.39         | \$41.77                  | -                      |
| 1986 | \$39.40 | \$36.48  | \$36.47 | \$37.50  | \$43.77          | \$41.78           | \$41.12      | \$38.29    | \$38.11         | \$41.11                  | -                      |
| 1987 | \$40.87 | \$37.56  | \$39.31 | \$39.79  | \$45.00          | \$42.84           | \$42.05      | \$39.53    | \$39.68         | \$42.10                  | -                      |
| 1988 | \$41.16 | \$38.17  | \$39.21 | \$39.33  | \$44.57          | \$43.11           | \$42.06      | \$39.69    | \$39.95         | \$41.54                  | \$44.01                |
| 1989 | \$41.42 | \$39.07  | \$39.64 | \$40.26  | \$43.78          | \$43.11           | \$42.51      | \$40.02    | \$40.65         | \$41.18                  | \$43.99                |

- Notes : \*
- Expressed in inflation adjusted, real 1989 dollars
  - Inflation adjustments have been based on the Consumer Price Index for Edmonton and Calgary
- \*\* Hinton was not included in the 1981 study
- \*\*\* Lloydminster was not included in the 1981 through 1983 studies
- \*\*\*\* Peace River was not included in the 1981 through 1987 studies

### 3.0 SUMMARY OF FINDINGS FOR THE WALK-UP APARTMENT

TABLE WA. 13 : Trade Division Cost Summaries

| LOCATION                  | EDMONTON  | CALGARY   | RED DEER  | FORT<br>McMURRAY | GRANDE<br>PRAIRIE | HINTON    | LETHBRIDGE | MEDICINE<br>HAT | LLOYD-<br>MINSTER | PEACE<br>RIVER |
|---------------------------|-----------|-----------|-----------|------------------|-------------------|-----------|------------|-----------------|-------------------|----------------|
| Divisions                 |           |           |           |                  |                   |           |            |                 |                   |                |
| 1. Excavation             | 2,901     | 4,597     | 3,651     | 4,233            | 3,603             | 2,980     | 3,742      | 3,302           | 3,686             | 3,625          |
| 2. Concrete               | 20,548    | 19,243    | 20,875    | 24,555           | 23,927            | 24,287    | 20,100     | 21,848          | 20,434            | 22,166         |
| 3. Dampproofing           | 794       | 953       | 998       | 1,305            | 1,202             | 993       | 967        | 951             | 884               | 1,204          |
| 4. Siding                 | 15,767    | 15,724    | 16,541    | 19,426           | 19,522            | 19,074    | 18,242     | 18,516          | 18,508            | 20,699         |
| 5. Roofing                | 26,476    | 27,740    | 27,766    | 34,079           | 28,746            | 28,305    | 26,562     | 27,343          | 28,380            | 29,270         |
| 6. Rough<br>Carpentry     | 152,262   | 154,124   | 148,179   | 174,798          | 165,343           | 161,939   | 155,559    | 150,931         | 151,989           | 162,122        |
| 7. Finish<br>Carpentry    | 11,631    | 12,338    | 11,195    | 11,826           | 11,302            | 10,635    | 10,989     | 10,987          | 10,824            | 11,945         |
| 8. Windows and<br>Glazing | 27,346    | 26,097    | 28,199    | 31,983           | 29,209            | 28,464    | 28,235     | 28,595          | 28,109            | 30,646         |
| 9. Sealants               | 921       | 937       | 916       | 926              | 945               | 916       | 886        | 909             | 877               | 945            |
| 10. Doors                 | 44,357    | 40,646    | 44,578    | 44,926           | 48,023            | 46,610    | 44,460     | 43,539          | 45,931            | 49,551         |
| 11. Hardware              | 3,992     | 4,140     | 4,046     | 4,164            | 4,162             | 4,062     | 4,115      | 4,129           | 3,913             | 4,198          |
| 12. Ceramic<br>Tiling     | 5,802     | 5,782     | 5,759     | 6,652            | 6,669             | 6,271     | 6,342      | 6,663           | 7,449             | 6,975          |
| SUB - TOTAL               | \$312,797 | \$312,321 | \$312,703 | \$358,873        | \$342,653         | \$334,536 | \$320,199  | \$317,713       | \$320,984         | \$343,346      |



3.0 SUMMARY OF FINDINGS FOR THE WALK-UP APARTMENT

TABLE WA. 13 : Trade Division Cost Summaries (cont'd)

| LOCATION                            | EDMONTON  | CALGARY   | RED DEER  | FORT<br>McMURRAY | GRANDE<br>PRAIRIE | HINTON    | LETHBRIDGE | MEDICINE<br>HAT | LLOYD-<br>MINSTER | PEACE<br>RIVER |
|-------------------------------------|-----------|-----------|-----------|------------------|-------------------|-----------|------------|-----------------|-------------------|----------------|
| Divisions                           |           |           |           |                  |                   |           |            |                 |                   |                |
| 13. Wallboard                       | 58,703    | 59,050    | 60,346    | 69,865           | 63,296            | 68,872    | 61,558     | 62,691          | 65,671            | 68,023         |
| 14. Flooring                        | 50,720    | 51,459    | 51,968    | 52,922           | 53,872            | 52,268    | 52,428     | 54,015          | 50,840            | 55,034         |
| 15. Painting                        | 21,993    | 21,184    | 23,831    | 23,779           | 24,337            | 24,844    | 24,898     | 25,467          | 22,971            | 24,305         |
| 16. Fittings                        | 49,707    | 49,376    | 52,722    | 56,735           | 52,081            | 51,476    | 54,217     | 53,251          | 49,546            | 56,856         |
| 17. Specialties                     | 18,743    | 18,883    | 18,863    | 19,479           | 20,062            | 19,209    | 18,592     | 19,432          | 18,642            | 20,439         |
| 18. Appliances                      | 34,676    | 34,676    | 34,368    | 35,512           | 35,572            | 34,926    | 35,148     | 35,208          | 34,574            | 36,958         |
| 19. Plumbing                        | 67,200    | 68,880    | 68,760    | 69,720           | 77,712            | 71,568    | 66,552     | 68,616          | 64,320            | 79,584         |
| 20. Heating                         | 32,760    | 36,120    | 39,240    | 43,560           | 44,424            | 41,712    | 29,856     | 33,888          | 45,456            | 45,120         |
| 21. Ventilation                     | 8,280     | 8,376     | 8,040     | 9,480            | 9,792             | 9,864     | 9,072      | 9,144           | 9,552             | 9,864          |
| 22. Fire<br>Protection              | 2,460     | 2,328     | 2,304     | 2,736            | 2,832             | 2,880     | 2,328      | 2,400           | 2,880             | 2,928          |
| 23. Electrical                      | 43,560    | 47,280    | 50,760    | 55,320           | 58,344            | 60,048    | 47,808     | 52,536          | 62,040            | 60,048         |
| 24. Site Overhead                   | 50,000    | 50,000    | 50,000    | 50,000           | 50,000            | 50,000    | 50,000     | 50,000          | 50,000            | 50,000         |
| Subtotals - 1-24                    | \$751,599 | \$759,933 | \$773,905 | \$847,981        | \$834,977         | \$822,203 | \$772,656  | \$784,361       | \$797,476         | \$852,505      |
| 25. Gnrl. Contr's<br>Ovhd. & Profit | 29,328    | 32,472    | 30,840    | 27,144           | 26,808            | 27,432    | 27,312     | 28,176          | 25,560            | 26,784         |
| TOTAL                               | \$780,927 | \$792,405 | \$804,745 | \$875,125        | \$861,785         | \$849,635 | \$799,968  | \$812,537       | \$823,036         | \$879,289      |



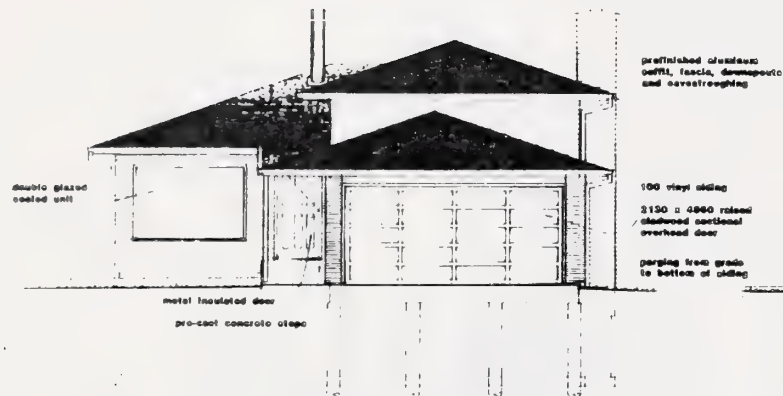
AFFENDIX A

Reduced Drawings : Single Detached Dwelling

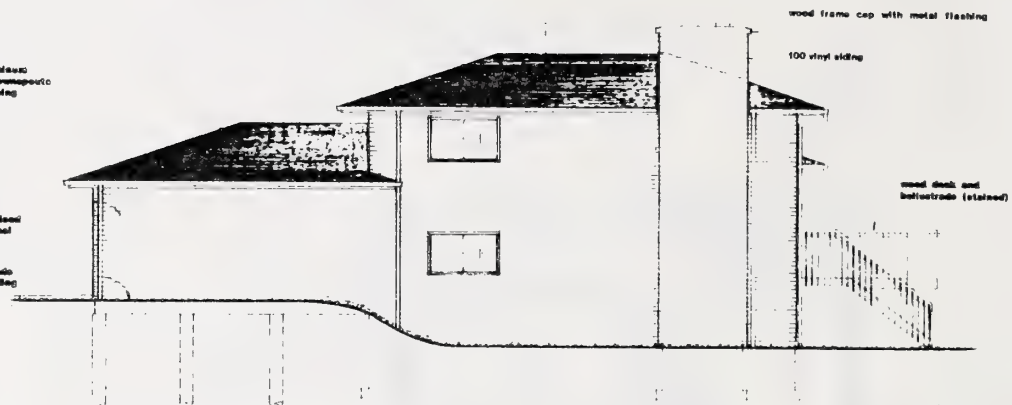








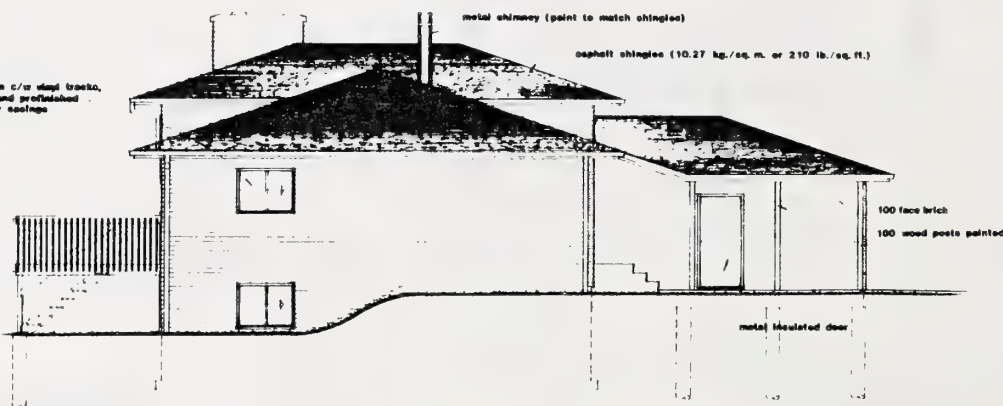
FRONT ELEVATION



RIGHT SIDE ELEVATION

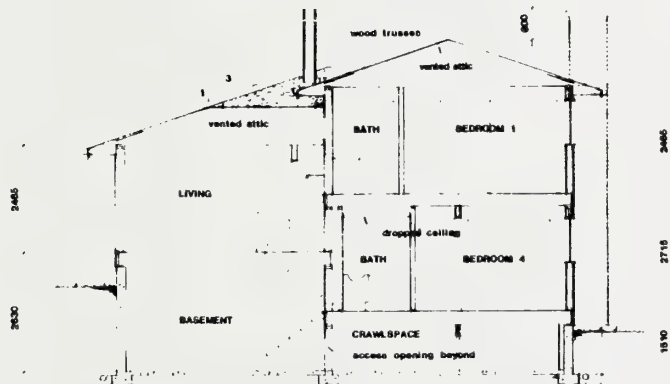


BACK ELEVATION

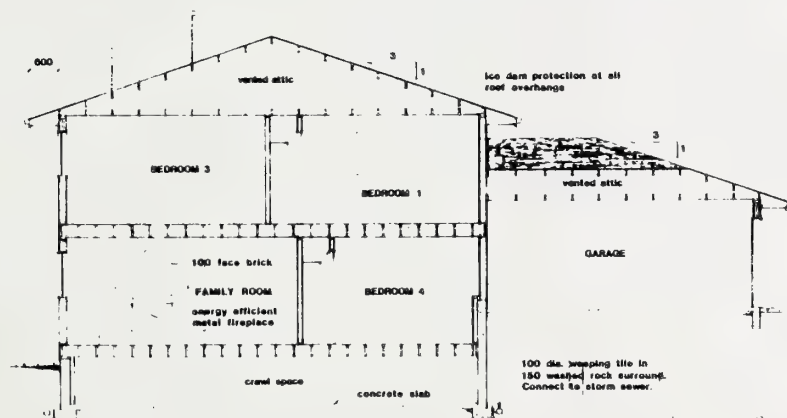


LEFT SIDE ELEVATION





A-A BUILDING CROSS SECTION



B-B BUILDING CROSS SECTION

## SPECIFICATIONS

### FOUNDATIONS

- 20 Mpa, type 50 concrete in 450 x 200 reinforced concrete footings
- 20 Mpa, type 50 concrete in 200mm cp concrete foundation walls c/w 4 rows of #10 rebar
- 20 Mpa concrete basement floor slab 75mm thick over 8 mil poly. and 150mm compacted sand
- 100mm reinforced garage floor on compacted sand
- 300mm dia. reinforced concrete piles under garage floor and grade beam
- 100mm dia. weeping tile c/w minimum of 150 washed gravel surround
- asphalt emulsion spray applied to interior and exterior of foundation

### FRAMING

- floor joists 38 X 235 KD spruce at 400mm o.c. and c/w 38 X 38 cross-bridging
- built-up fir beams on adjustable steel posts
- 18mm tongue and groove fir plywood subfloor
- 10mm fir plywood underlayment
- exterior walls 38 X 140 KD spruce at 400mm o.c.
- interior partitions 38 X 89 KD spruce at 400mm o.c.
- 8mm "sturd-board" wall sheathing
- pre-engineered wood roof trusses
- 10mm spruce plywood roof sheathing

### INSULATION/VAPOUR BARRIER/DRYWALL

- exterior walls R20 glass fibre batts
- 4mil poly. vapour barrier caulked at all joints
- ceilings R40 loose fill glass fibre insulation and 4 mil poly. v.b.
- 12mm gypsum wallboard throughout

### EXTERIOR FINISHES

(see building elevations on drawing no. 2)

### DOORS AND WINDOWS

- metal insulated front door
- 1800 wide aluminum patio door c/w insect screen and pretreated aluminum clad fir frame and casing
- hollow core interior doors (rotary cut mahogany), stained
- mahogany faced bi-fold closet doors
- aluminum windows c/w vinyl tracks, insect screens, and pretreated aluminum clad fir casing
- insulated glass sealed unit in living room window
- 4860 wide X 2130 high raised cladwood sectional overhead garage door (painted)

### INTERIOR FINISHES

- ceramic tile to bath surround
- texture finish to ceilings
- sheet vinyl flooring to bedrooms, kitchen and dining area
- 32oz., 100% nylon carpet with 6mm chip foam underlay
- paint to walls; latex semi-gloss (washroom, kitchen, dining area)
- upgraded baseboards and trim

### FITTINGS

- Douglas fir plywood sheathing with hardwood edging
- bathroom vanity (solid wood)
- kitchen overhead and base cabinets (solid wood)
- hardwood wood railing c/w spindles, railing shoe, and newel posts

### SPECIALTIES

- all washroom accessories including full-size mirrors
- medicine cabinets
- 25mm dia. metal shower curtain rods
- mailboxes and house numbers
- range hood
- energy efficient 815mm fireplace c/w fan
- upgraded hardware throughout

### PLUMBING AND HEATING

- stainless steel double kitchen sink
- vanity sinks
- water closets
- fiberglass tub/shower units
- dishwasher rough-in
- 3 piece bath on third level
- washer standpipe
- 2 hosebibs
- 32 imp. gallon (152 liters) water heater (gas fired)
- gas fired, forced air furnace c/w humidifier

### ELECTRICAL

- 100 amp, 32 breaker electrical service
- 220 volt electrical service to dryer and range locations
- valence c/w fluorescent lighting fixture in main bath
- GFI protected plugs in bathrooms
- 2 exterior weatherproof well plugs
- dishwasher rough-in
- 3 telephone locations
- 2 cable locations
- smoke detectors
- electrical wiring for future garage door opener
- range hood installation
- bathroom fans
- upgraded lighting package
- roughed-in central vacuum system







APPENDIX B

Reduced Drawings : Walk-Up Apartment





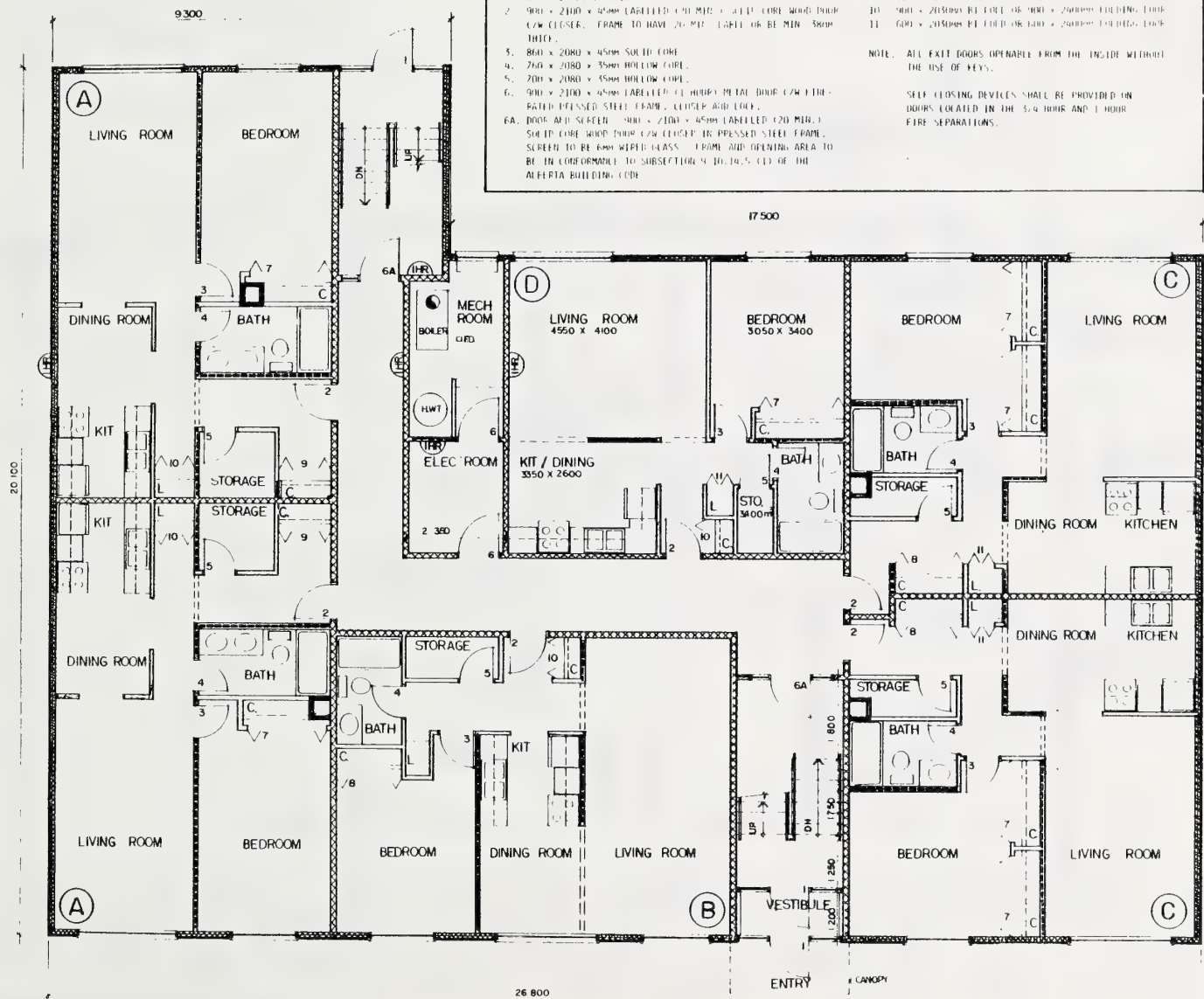


FOUNDATION PLAN

SCALE 1" = 50'







# 1. 900 x 2100mm ALUMINUM GLAZED DOOR C/W DOOR CLOSER, PUSH AND PULL, LOCK AND THRESHOLD - DOUBLE GLASS UNIT SHOULD NOT USE KEY TO OPEN.

2. 900 x 2100 x 450mm LABELED C/W MFL - ALL CORE WOOD DOOR C/W CLOSER, FRAME TO HAVE 20 MFL LABEL OR BE MIN 50mm THICK.
3. 800 x 2080 x 450mm SOLID CORE.
4. 700 x 2080 x 450mm BOLLER CORE.
5. 700 x 2080 x 450mm BOLLER CORE.
6. 900 x 2100 x 450mm LABELED C/W MFL METAL DOOR C/W FIRE RATED PRESSED STEEL FRAME, CLOSER AND LOCK.
- 6A. DOOR AND SCHEDULE - 900 x 2100 x 450mm LABELED C/W MFL SOLID CORE WOOD DOOR C/W CLOSER IN PRESSED STEEL FRAME, SCREEN TO BE 6mm WIRE GLASS - FRAME AND OPENING AREA TO BE IN CONFORMANCE TO SUBSECTION 9.10.14.5 (1) OF THE ALBERTA BUILDING CODE.
7. 1800 x 2080mm REFRIG. DOOR - 1800 x 2080mm REFRIG. DOOR.
8. 1500 x 2080mm REFRIG. DOOR - 1500 x 2080mm REFRIG. DOOR.
9. 1200 x 2080mm REFRIG. DOOR - 1200 x 2080mm REFRIG. DOOR.
10. 900 x 2050mm REFRIG. DOOR - 900 x 2050mm REFRIG. DOOR.
11. 600 x 2050mm REFRIG. DOOR - 600 x 2050mm REFRIG. DOOR.

NOTE: ALL EXIT DOORS OPENABLE FROM THE INSIDE WITHOUT THE USE OF KEYS.

SELF CLOSING DEVICES SHALL BE PROVIDED ON DOORS LOCATED IN THE 5/4 HOUR AND 1 HOUR FIRE SEPARATIONS.

## 1. 900 x 2100mm ALUMINUM GLAZED DOOR C/W DOOR CLOSER, PUSH AND PULL, LOCK AND THRESHOLD - DOUBLE GLASS UNIT SHOULD NOT USE KEY TO OPEN.

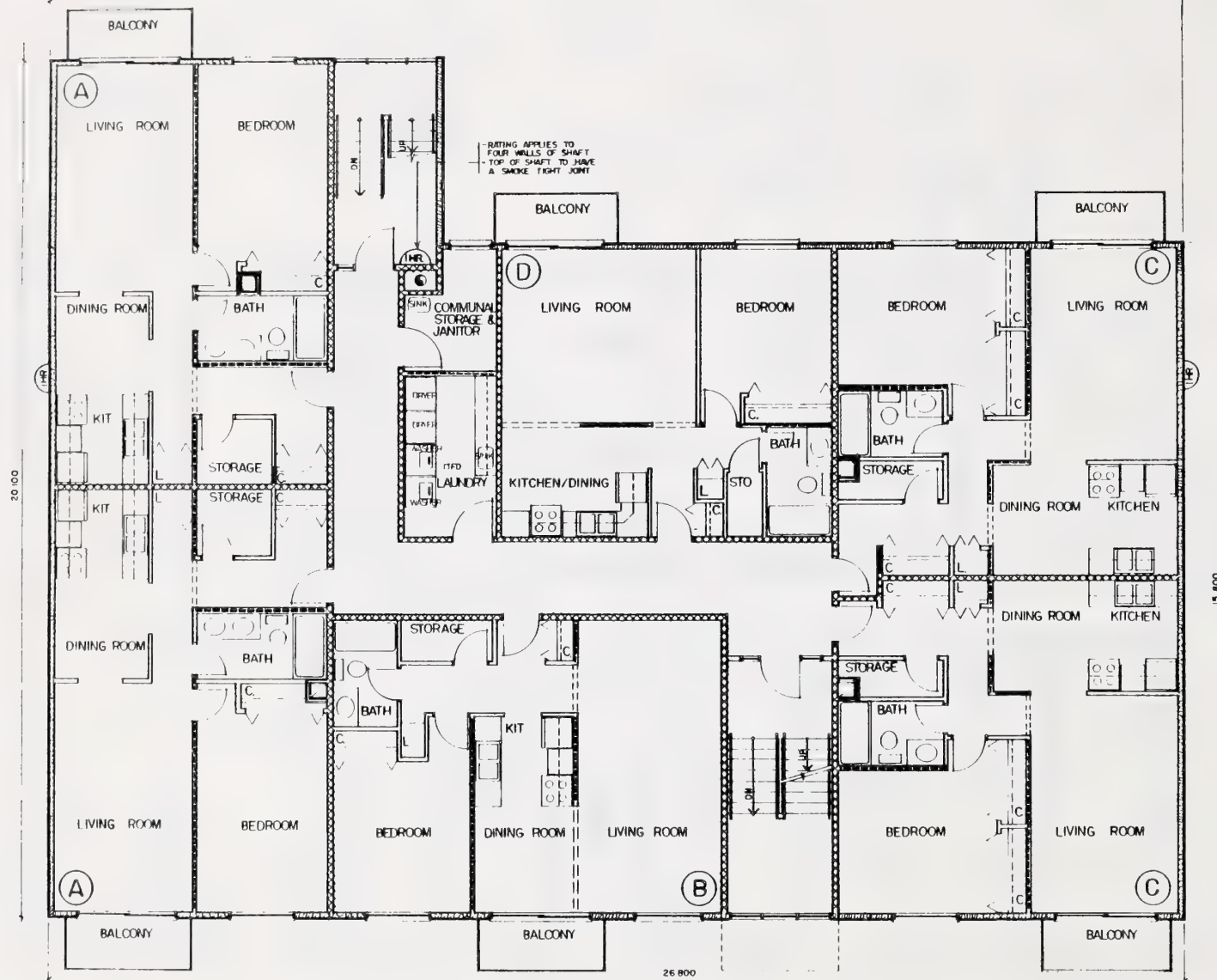
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## ALBERTA HOUSE COST COMPARISON STUDY

BASMENT FLOOR PLAN

SCALE 1:50





NOTE  
SEE BASEMENT FLOOR PLAN  
FOR TYPICAL DOOR & B-FOLD  
DOOR TYPES, SIZES & LOCATIONS

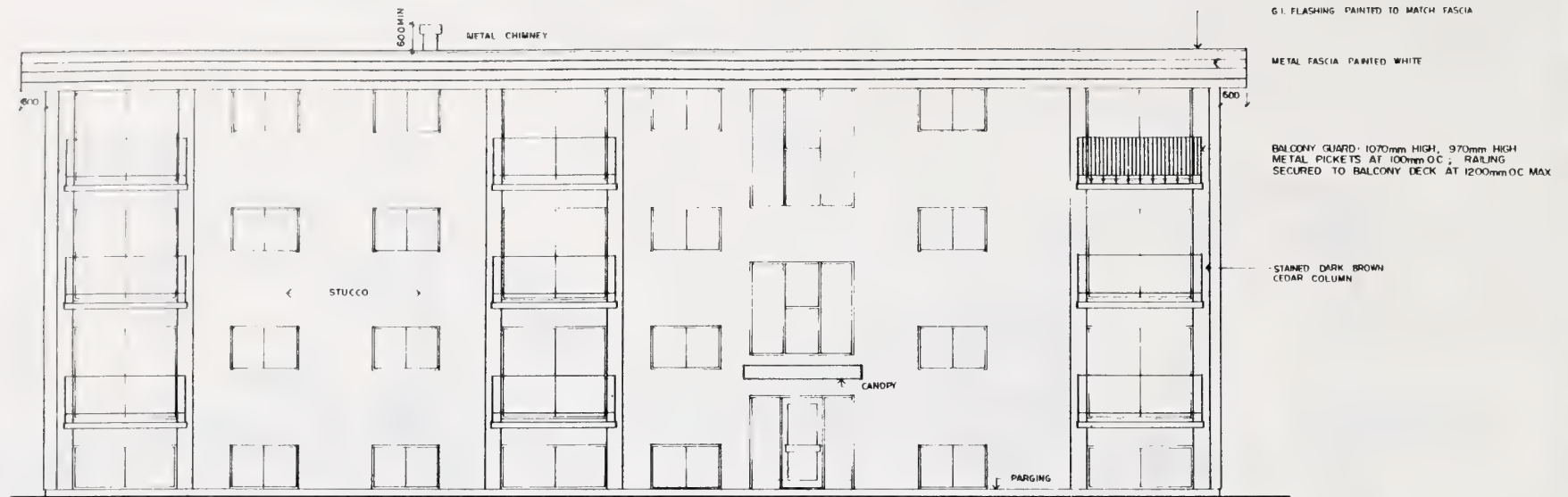
# ALBERTA HOUSE COST COMPARISON STUDY

MAIN FLOOR PLAN

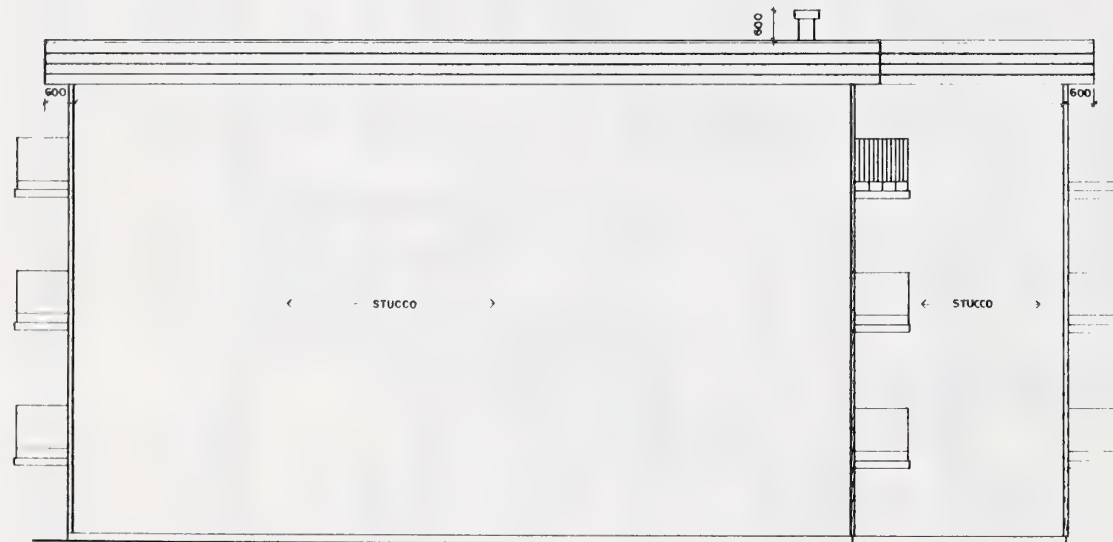
SCALE 1" = 50'







FRONT ELEVATION



RIGHT ELEVATION

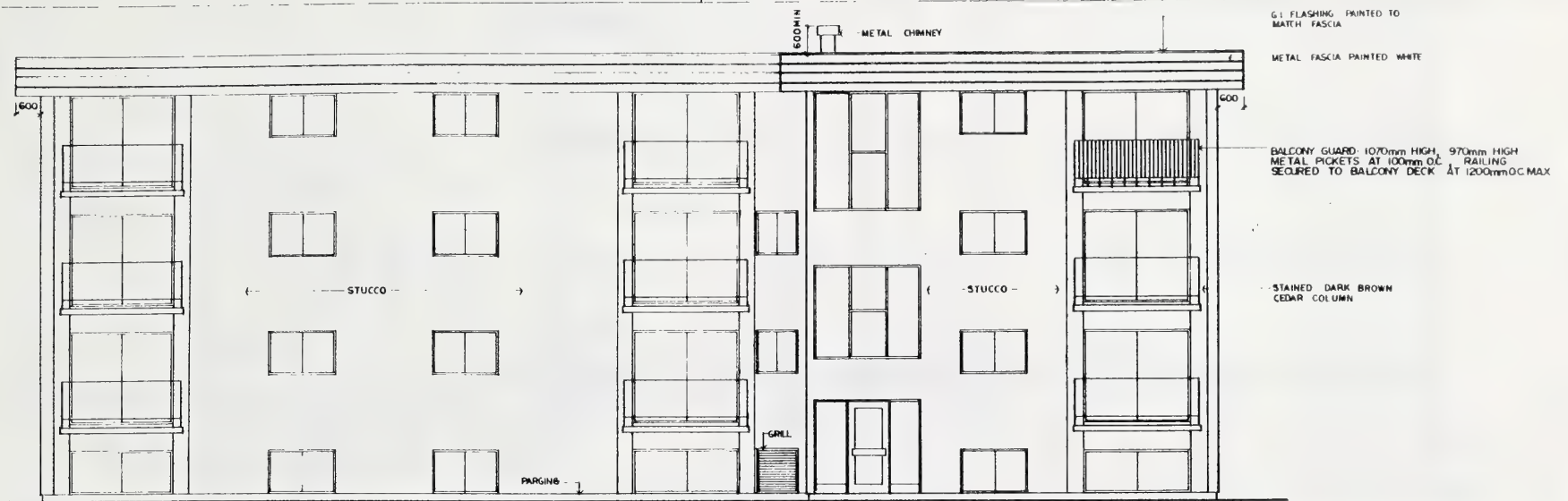
**ALBERTA HOUSE COST COMPARISON STUDY**

ELEVATIONS

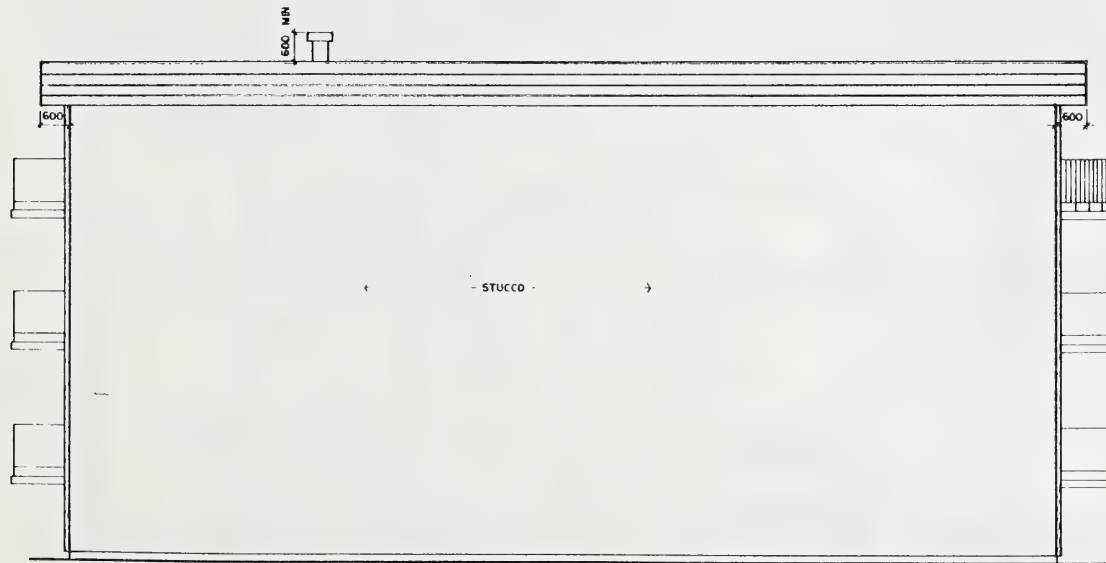
SCALE 1" = 50'







REAR ELEVATION



LEFT ELEVATION

DRAWING SHALL BE SIGNED AND SEALED BY A  
PROFESSIONAL ENGINEER OR ARCHITECT REGISTERED  
IN THE PROVINCE OF ALBERTA

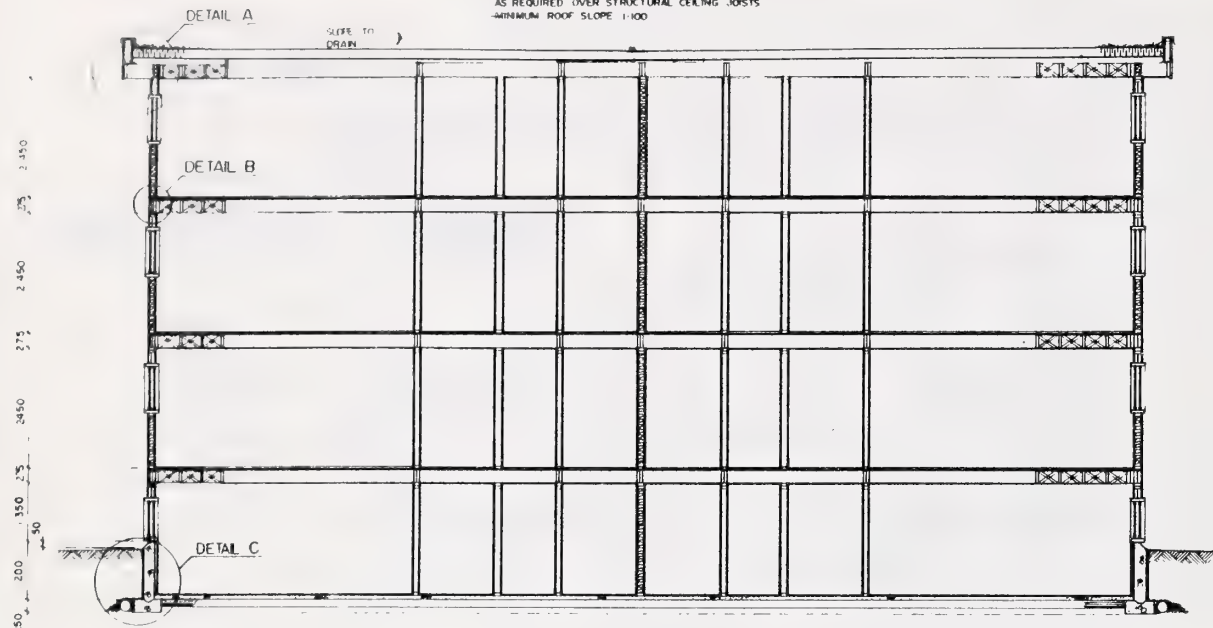
**ALBERTA HOUSE COST COMPARISON STUDY**

ELEVATIONS

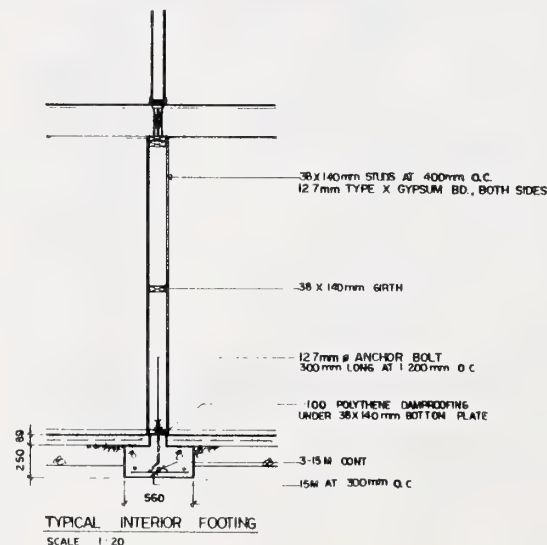
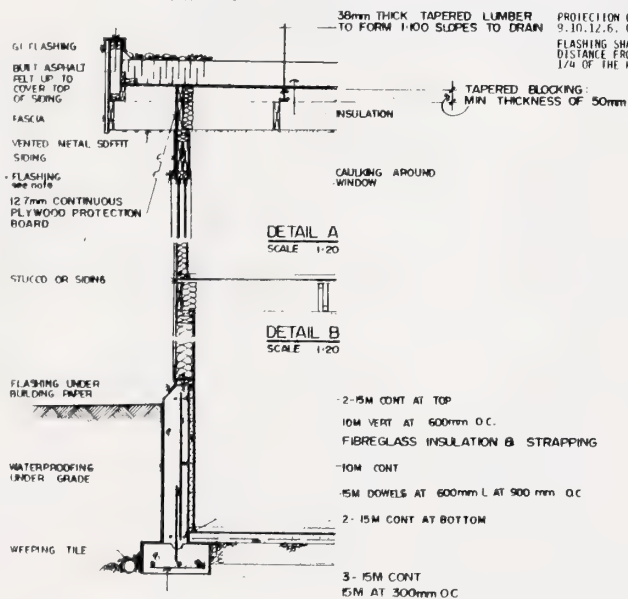
SCALE 1:50



NOTE - SEE SITE PLAN FOR ROOF SLOPE CONFIGURATION  
- ACHIEVE SLOPES BY TAPERING 38mm THICK LUMBER  
AS REQUIRED OVER STRUCTURAL CEILING JOISTS  
- MINIMUM ROOF SLOPE 1:100



SECTION  
SCALE 1:50



TYPICAL INTERIOR FOOTING  
SCALE 1:20

ROOF CONSTRUCTION 1 HOUR FIRE  
PENETRABLE RATING

- ROOFING GRAVEL
- ROOFING
- RSI 6 FIBERGLASS INSULATION AND VAPOR BARRIER
- 10mm PLYWOOD SHEATHING - ALL EDGES SHORLAPPED
- WITH MIN. 38 x 88mm WOOD BEAMING
- SR x 25mm AT 1 SPRING JOISTS AT 400mm O.C.
- SR x 88mm CROSS-BRACING

15.0mm TYPE X GYPSUM BOARD

EXTERIOR WALL CONSTRUCTION

TYPE A 1 HOUR FIRE RESISTANCE RATING

- SILING OR STUCCO
- BUILDING PAPER
- RSI 2.1 MINERAL WOOL INSULATION AND VAPOR BARRIER
- SR x 88mm WOOD STUDS AT 400mm O.C. (SR x 190mm WOOD STUDS AT 400mm O.C. FOR BASEMENTS)
- 12.7mm GYPSUM BOARD

TYPE B 1 HOUR FIRE RESISTANCE RATING

- SAME AS TYPE A EXCEPT MINERAL WOOL INSULATION TO HAVE DENSITY OF 1.25g/cm<sup>3</sup> 15.9mm TYPE X GYPSUM BOARD AND STUCCO OR NON-COMBUSTIBLE SILING

FLOOR CONSTRUCTION

- 3/4 HOUR FIRE SEPARATION AND S.T.C. RATING OF 45
- FLOOR FINISH
- 8mm PLYWOOD UNDERLAY
- 19mm T & G LUMBER OR 15.9mm PLYWOOD OR WATERBOARD SURFING WITH MINERAL FIBRE BETWEEN JOISTS SPACED 400mm O.C.
- SR x 25mm AT 1 SPRING JOISTS AT 400mm O.C.
- SR x 88mm CROSS-BRACING AT 2.1m O.C. MAX.
- RESILIENT CHANNELS
- 15.9mm TYPE X GYPSUM BOARD TYPICALLY EXCEPT FOR MECHANICAL ROOM CEILING - APPLY 2 LAYERS OF 15.9mm TYPE X GYPSUM BOARD

CORRIDOR AND DEMISING WALL CONSTRUCTION

- 3/4 HOUR FIRE SEPARATION AND S.T.C. RATING OF 45
- TWO ROWS SR x 88mm STUDS, EACH SET 400mm O.C. STAGGERED ON COMMON SR x 140mm PLATE, MINERAL FIBRE WITH A MASS OF AT LEAST 1.25g/cm<sup>3</sup> ON EACH SIDE
- 12.7mm GYPSUM BOARD, BOTH SIDES

BEARING WALL CONSTRUCTION

- 3/4 HOUR FIRE RESISTANCE RATING
- SR x 140mm OR SR x 88mm WOOD STUDS AT 400mm O.C.
- 12.7mm TYPE X GYPSUM WALLBOARD, BOTH SIDES

NOTES

1. PROVIDE GALVANIZED STEEL, GA. 457mm AT THE HEAD OF ALL EXTERIOR OPENINGS.
2. WEPPING TILES SHALL BE LAID ON HOOPS, TIERED OR WELL COMPACTED SOIL SO THAT THE TOP OF THE WEPPING TILE IS BELOW THE UNDERSIDE OF THE FLOOR SLAB.
3. ROOF TRUSSES SHALL BE DESIGNED IN CONFORMANCE WITH PART 4 AND FOR THE APPROPRIATE GROUND SNOW LOADS STATED IN TABLE 2.2.1.8 (STANDARDS 85-11-100)

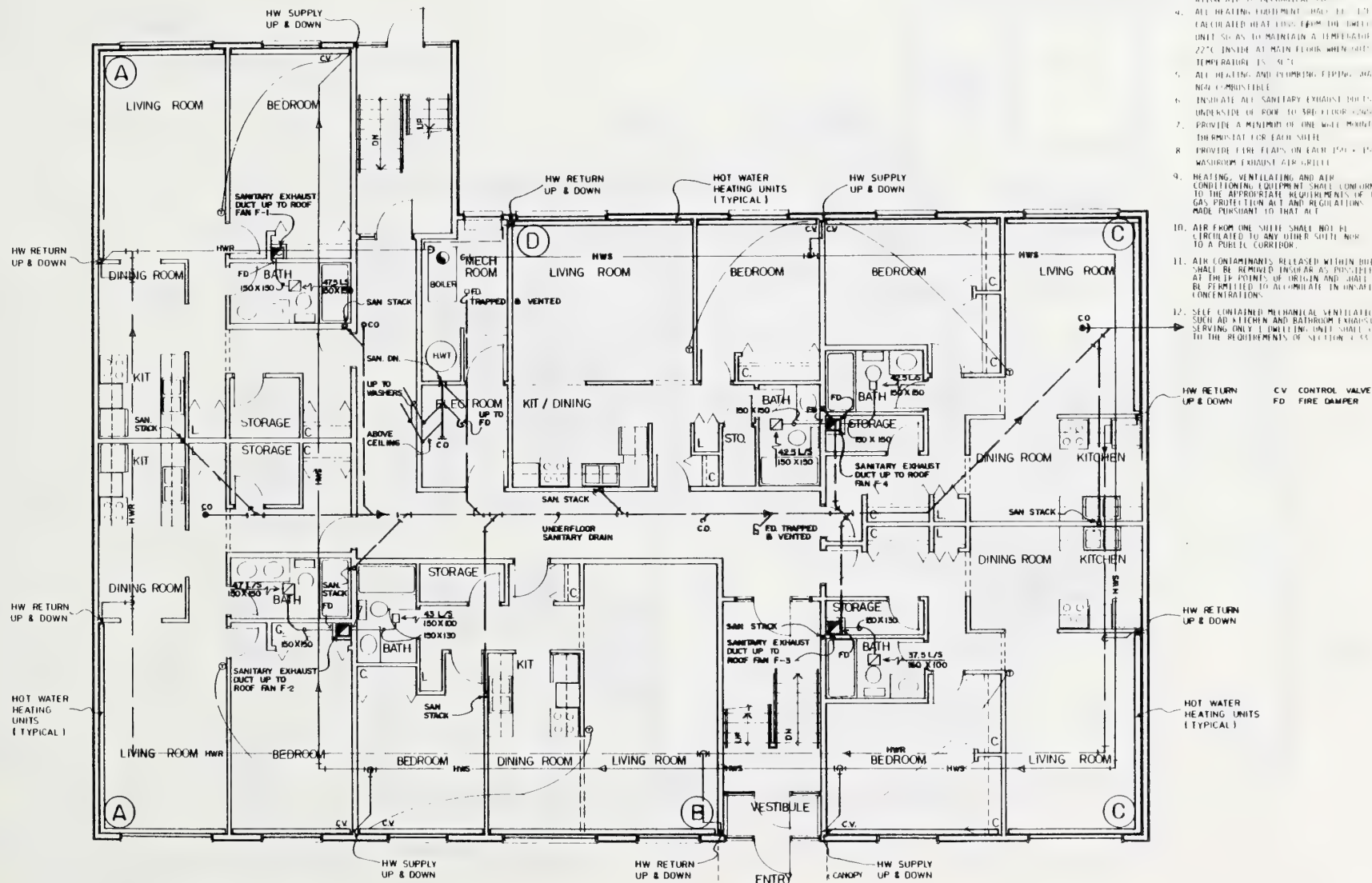
NOTE  
ALTERNATE INSULATION  
RSI 6 FIBERGLASS BATT  
INSULATION SET IN  
JOIST SPACE

ALBERTA HOUSE COST COMPARISON STUDY  
SECTION & DETAILS

SCALES : AS SHOWN

# MECHANICAL NOTES

1. GAS FIRED HOT WATER HEATING UNITS SHALL BE INSTALLED IN ACCORDANCE WITH THE GAS PROTECTION ACT AND REGULATIONS MADE PURSUANT TO THAT ACT.
2. PROVIDE EXHAUST EQUIPMENT FOR EACH UNIT.
3. PROVIDE ADEQUATE COMBUSTION AND VENTILATION AIR TO MECHANICAL ROOMS.
4. ALL HEATING EQUIPMENT SHALL BE DESIGNED TO CALCULATED HEAT LOSS FROM THE BUILDING UNITS SO AS TO MAINTAIN A TEMPERATURE OF 22°C INSIDE AT MAIN FLOOR WHEN OUTSIDE TEMPERATURE IS 0°C.
5. ALL HEATING AND PUMPING PIPING SHALL BE NON-COMBUSTIBLE.
6. INSULATE ALL SANITARY EXHAUST DUCTS FROM OUTSIDE OF ROOM TO SRE FLOOR EXHAUSTS.
7. PROVIDE A MINIMUM OF ONE WELL MODERATED THERMOSTAT FOR EACH SUITE.
8. PROVIDE FIRE FLAPS ON EACH 150 x 150 POUND WASHROOM EXHAUST AIR GRILLE.
9. HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT SHALL CONFORM TO THE APPROPRIATE REQUIREMENTS OF THE GAS PROTECTION ACT AND REGULATIONS MADE PURSUANT TO THAT ACT.
10. AIR FROM ONE SUITE SHALL NOT BE CIRCULATED TO ANY OTHER SUITE NOR TO A PUBLIC CORRIDOR.
11. AIR CONTAMINANTS RELEASED WITHIN BUILDINGS SHALL BE REMOVED INsofar as POSSIBLE AT THEIR POINTS OF ORIGIN AND SHALL NOT BE PERMITTED TO ACCUMULATE IN UNLIVE CONCENTRATIONS.
12. SELF CONTAINED MECHANICAL VENTILATION SYSTEMS SUCH AS KITCHEN AND BATHROOM EXHAUST FANS, SERVING ONLY ONE LIVING UNIT SHALL CONFORM TO THE REQUIREMENTS OF SECTION 4.3.5.



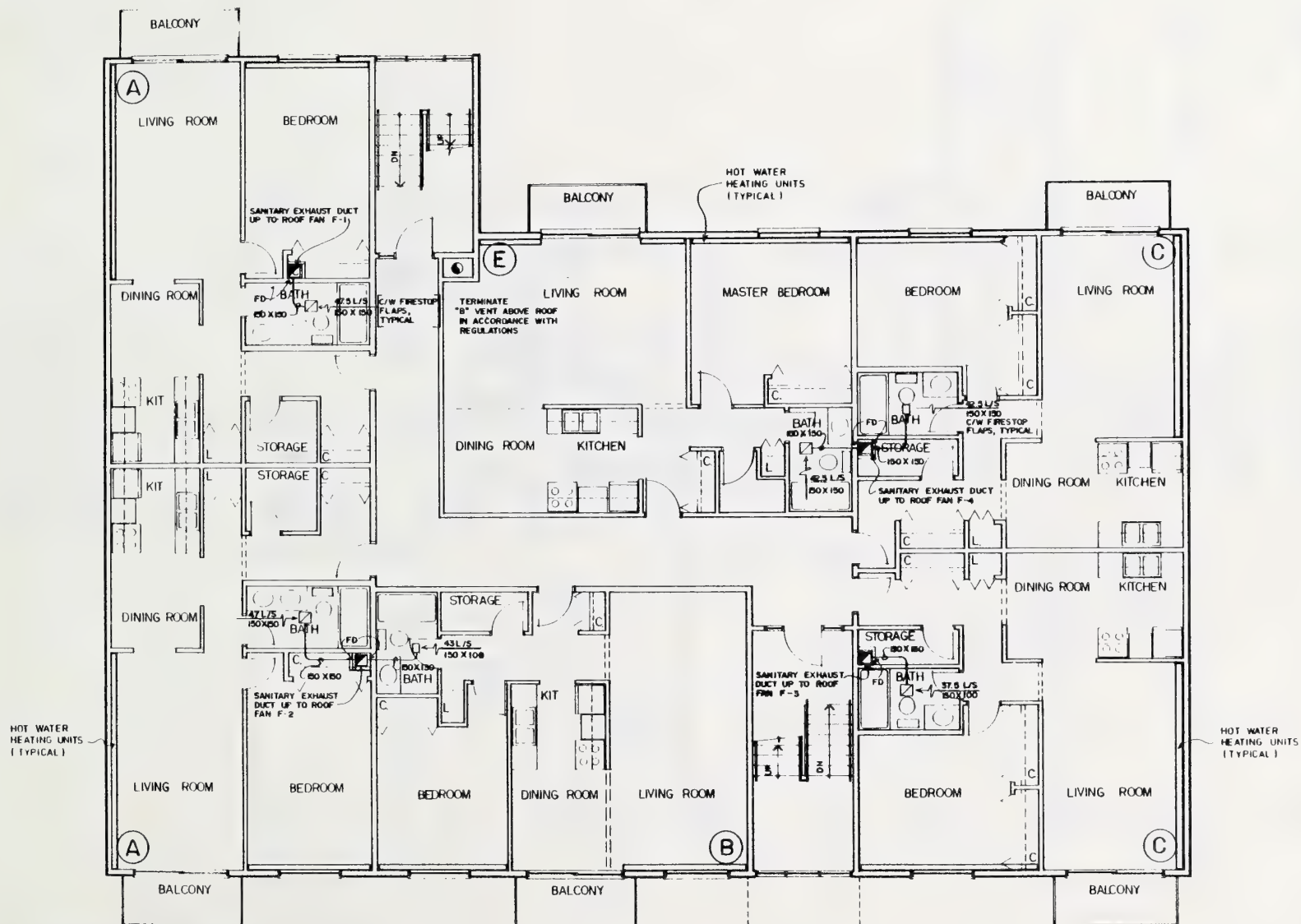
## ALBERTA HOUSE COST COMPARISON STUDY

BASEMENT FLOOR PLAN  
MECHANICAL LAYOUT  
SCALE 1/50





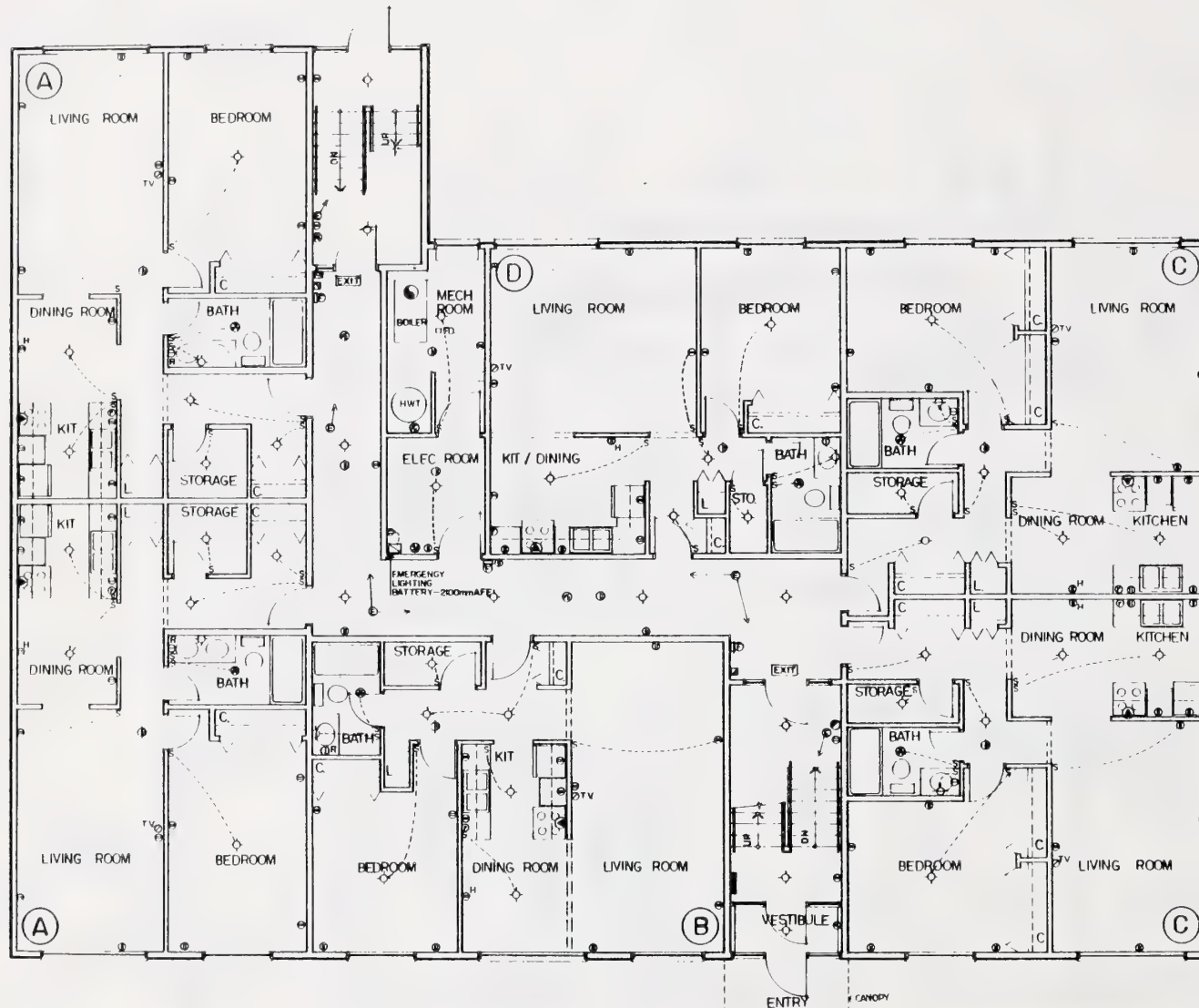




# ALBERTA HOUSE COST COMPARISON STUDY

2ND & 3RD FLOOR PLAN  
MECHANICAL LAYOUT  
SCALE 1" = 30'



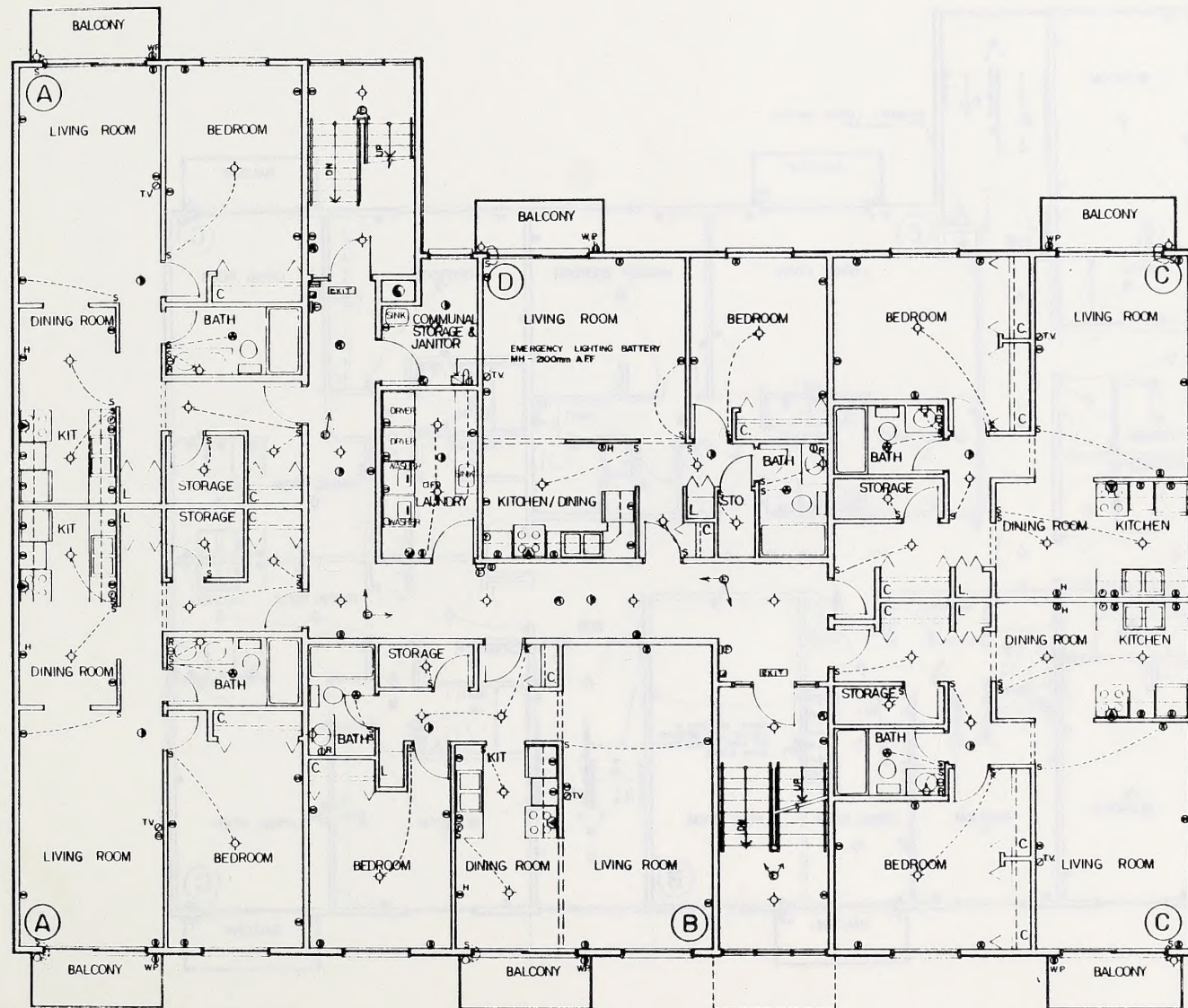


- ELECTRICAL LEGEND
- [EXIT] - EXIT LIGHTS WITH 2.25W 120V AND 1.125W EMERGENCY POWER SUPPLY
  - [E] - EMERGENCY LIGHTING HEAD, 1.5V 12W
  - [E] - EMERGENCY LIGHTING, 2 HEADS, 1.5V 12W
  - [S] - SMOKE ALARM
  - [M] - MANUAL FIRE ALARM PULLATION
  - [F] - FIRE ALARM BELL, 240V/10A
  - [M] - METER
  - [R] - END OF LINE RESISTOR
  - [M] - MASTER FIRE ALARM TAP 120V
  - [A] - ANNUNCIATOR AND GEL CELL BATTERY AND 120V POWER SUPPLY AND AUTOMATIC CHARGER, 1 ZONE PER FLOOR, 2 ZONES STAIRS

# ALBERTA HOUSE COST COMPARISON STUDY

BASEMENT FLOOR PLAN  
ELECTRICAL LAYOUT  
SCALE 1/50



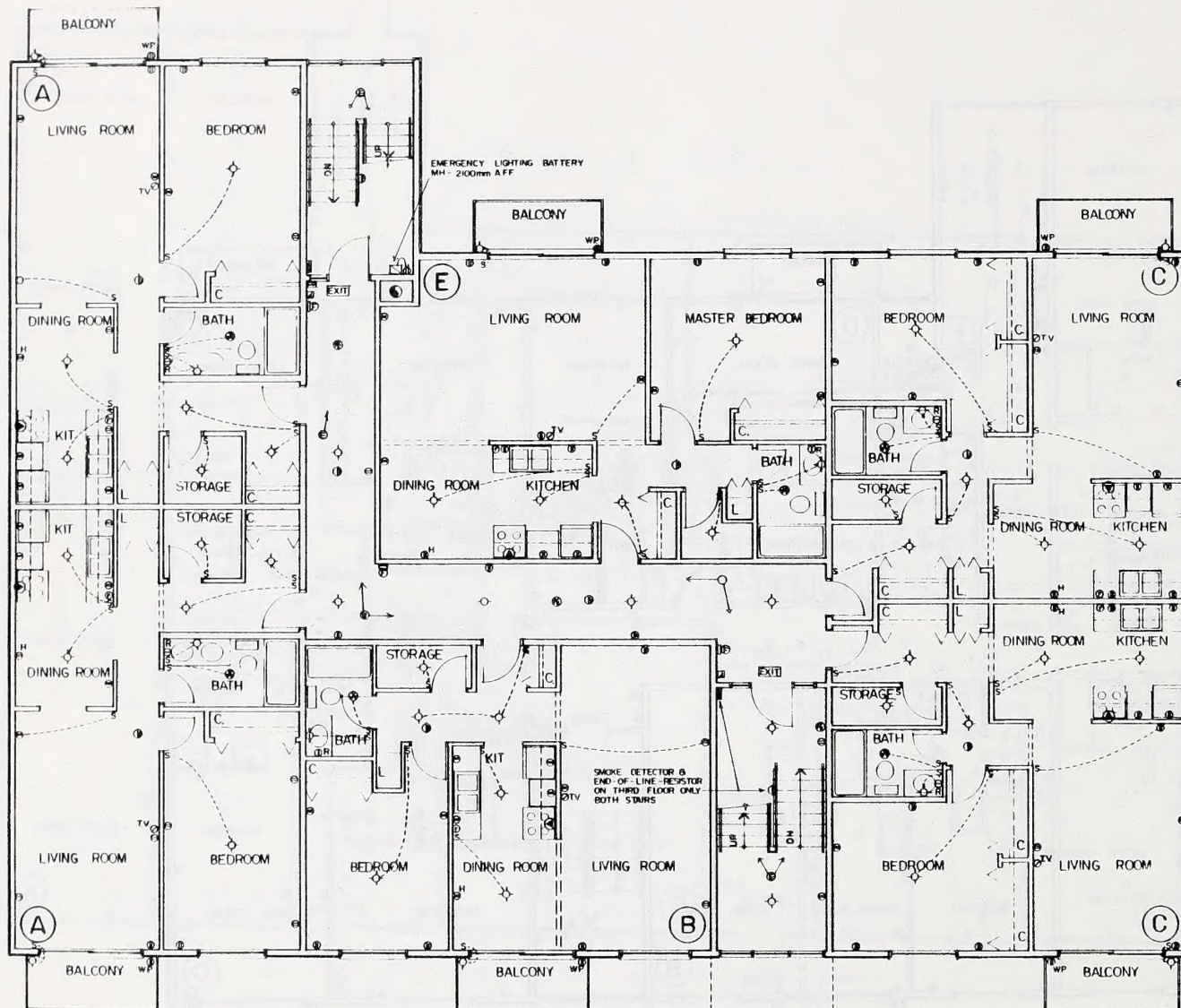


# ALBERTA HOUSE COST COMPARISON STUDY

MAIN FLOOR PLAN  
ELECTRICAL LAYOUT  
SCALE 1" = 30'







# ALBERTA HOUSE COST COMPARISON STUDY

2ND & 3RD FLOOR PLAN  
ELECTRICAL LAYOUT  
SCALE 1/32









